













*The American Journal  
of the Medical Sciences*

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THE

# AMERICAN JOURNAL

OF THE

## MEDICAL SCIENCES.

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ART. I. *Medical Statistics; consisting of estimates relating to the Population of Philadelphia, and its changes as influenced by the Deaths and Births, during a period of ten years, viz. from 1821 to 1830 inclusive.* By G. EMERSON, M. D.

SINCE the publication of the views in relation to the medical statistics of Philadelphia, presented in a former volume of this work, a new census has been taken and other data offered, which admit of an extension of the investigations to a further period—the commencement of the last year. The results developed by a continuation of the calculations, are of a highly interesting nature. Among them the most striking are, the increased rate of mortality within the last ten years, from epidemic causes that have but recently subsided, and the correct ratio of deaths for the coloured population, which, for reasons previously explained, was necessarily founded in some measure upon assumed data. Added to the time contained in former estimates, our calculations now embrace a connected series of twenty-four years, namely, from the year 1807 to 1830 inclusive.

### *Population.*

As a proper prelude to our inquiries, we present an abstract from the recent census, so as to show the number and description of inhabitants included within the built parts of the town, and from which the returns of interments are made. For the information of those unacquainted with the municipal divisions of Philadelphia, it may be useful to observe that the city proper, or that portion under the control of the mayor and councils, embraces but about one-half of the population of the whole town—the limits of the original incorporation

having been overrun in various directions. The parts subsequently built, instead of being united to the original incorporation, are formed into several distinct districts, each invested with corporate privileges.

An act of the state legislature, however, extends the provisions of the Health Law over the whole, so that the districts, as well as the city, have their representatives in the Board of Health. Those who attempt calculations of the comparative mortality of Philadelphia, without a precise knowledge of the districts which make returns of their interments to the Health Office, must necessarily be led into erroneous conclusions. For should the sum of the annual mortality be compared with a less amount of population than the returns of interments are made from, the ratio of deaths must appear greater than it actually is, and vice versa; should the contrary circumstances prevail. Gross errors, from such causes, for the most part, have already been committed by persons at a distance, and circulated very extensively both in this country and in Europe. Some of the publications alluded to have represented the mortality of Philadelphia as exceeding that of the other principal cities in the United States, whereas it has been shown to present as low, if not a lower rate than any one of them: we mean under ordinary circumstances, and in the absence of those epidemic visitations to which all places are subject.

Reckoning the whole population for the city and county, without reference to distinction of colour, the total amount is 188,961, of which number 90,552 are males, and 98,620 females. Adopting the distinction, the whites amount to 173,545, the blacks to 15,616. The increase of the entire population within the city and county conjointly, since the year 1820, is 51,864, being in the ratio of 37.8 per cent. for the whole period, or an average of  $3\frac{1}{2}$  per cent. per annum. The white increase estimated separately amounts to 49,599, or 40 per cent. for the ten years, being at the rate of about  $3\frac{1}{2}$  per cent. per annum. The increase of blacks alone for the ten years is 3732, being at the rate of about  $31\frac{1}{2}$  per cent. or  $2\frac{1}{2}$  per cent. per annum.

But it is that portion of our population embraced within the limits of the bills of mortality, which interests us most particularly. This alone is exhibited in our abstract, or table marked A. and amounts

\* This ratio, it must be observed, is computed upon geometrical principles, as approaching nearest to the rate at which population ordinarily increases, and not upon the arithmetical usually resorted to.

† Much interesting information relative to the changes and denseness of population in the city and county of Philadelphia, may be found in Hazzard's *Pennsylvania Register*, Vol. 8.

without distinction of colour, to 167,811. Compared with the population existing in 1820, we find an increase of 40.6 per cent. within the last ten years.

The *white* population considered separately, shows an increase greater than the general ratio just mentioned. The total amount is 153,169, and the increase during the ten years is 41.6 per cent. Estimating the sexes separately, there are 73,547 males, and 79,622 females, so that the last exceed the first in the ratio of 8½ per cent. or in other words, there are about 100 females to 92 males.

We find the ages of each of the sexes distributed into thirteen periods, commencing with those of and under the 5th year, then giving the number between the 5th and 10th, the 10th and 15th, the 15th and 20th, the 20th and 30th years, and so on to the most protracted periods of life. On comparing this division with that adopted when the former enumerations were made, it will be found to differ very materially, more than double the number of periods being given.

With the whites, the number of both sexes at different ages, compared with the total amount at all ages, stands thus:—All those of and under 5 years, constitute 14.6 per ct. of the whole population.

Do.	10	“	26.9	do.
Do.	15	“	37.6	do.
Do.	20	“	50.3	do.
Of and over	30	“	28.1	do.
Do.	40	“	14.6	do.
Do.	50	“	8.	do.
Do.	60	“	3.2	do.
Do.	70	“	1.08	do.
Do.	80	“	0.28	do.
Do.	90	“	about 4.5 per 10,000.	
Do.	100	“	about 6.5 per 100,000.	

In the period first marked, namely, that including all of and under the 5th year, the males exceed the females about 5 per cent. but in that which includes those between the 5th and 10th years, the male excess has diminished so as to be only about ½ per cent.

In the next five years, namely, between the 10th and 15th years, the females exceed the males about 8 per cent. and from this last named period to the 50th year, the excess continues pretty steadily in the ratio of from 8 to 10 per cent. Afterwards, however, it increases greatly, so that

\* An examination of the table of births will show that the number of males at birth exceeds that of the females more than 7 per cent.



Between the 50th and 60th yr's,	the females exceed the males	34 per ct.
“ 60th and 70th	“ “ “	59 “
“ 70th and 80th	“ “ “	90 “
“ 80th and 90th	“ “ “	79 “
“ 90th and 100th	“ “ “	40 “

Of those who had attained and exceeded a century, seven were females and three males.

The *Blacks* constitute about 8.7 per cent. of the whole population within the limits embraced by the bills of mortality. They have increased within the last ten years 28 per cent. or in a ratio of about 2.7 per cent. per annum—a much lower rate than that of the whites.

The whole amount included in our abstract is 14,642, of which 6307 are males, and 8335 females. The disparity between the sexes is therefore far greater than we find in the white population, the excess of females amounting to 32 per cent. or nearly a third. This is partly owing to the circumstance of the services of females being in more general demand in cities than in the country, and partly to the greater mortality of the males. The distribution into periods differs from that adopted for the whites, only six being given, instead of thirteen. The first designated is the 10th year, and the females of and under that age, exceed the males about 5 per cent. In that

Between the 10th and 24th years, the female excess is about 61 per ct.

“ 24th and 36th	“ “ “	36 “
“ 36th and 55th	“ “ “	16 “
“ 55th and 100th	“ “ “	38 “

With the black population, the number of both sexes at different periods of life, compared with the total amount at all ages, stands thus:—

All under 10 years	constitute	21.7 per cent.
“ 24	“ “	50.6 “
All over 36	“ “	22.1 “
“ 55	“ “	5.9 “
“ 100	“ “	1.7 or nearly 2 per 1000.

Of those that had attained 100 years and over, 14 were males and 12 females. It is curious to observe, that notwithstanding their small numbers when compared with the whites, they greatly exceed the latter in the proportion of their centenarians, and that with the blacks the number of male centenarians exceeds that of the female. From the difficulty which frequently occurs of ascertaining the ages of blacks with certainty, it is possible that more of them are reported among the instances of extreme longevity, than are entitled to the distinction.

*Births.*

In our former publication we were only enabled to present an account of the births for six years. We can now extend the period so as to embrace ten years, namely, from 1821 to 1830 inclusive. As the accuracy of the data upon which our calculations are founded, depends for the most part upon the character of those by whom the returns are made, that is to say, the accoucheurs, we think it proper to premise that the obstetric practice of Philadelphia is mostly in the hands of the physicians. In the last year, for instance, the register at the Health Office contained the names of one hundred and fifty-five practitioners of midwifery for the city and suburbs, of which number only twenty-one were females, the remaining one hundred and thirty-four being regular physicians, of whom some possess a very limited portion of practice, whilst others have a very great monopoly. Of the total number of births for the year mentioned, viz. 7628, the amount delivered by the female accoucheurs was 1061—leaving the balance of 6567 to be divided among the male practitioners. It thus appears that most of the returns of births are made in Philadelphia, by those whose standing for probity and intelligence should entitle their statements to credit. Whether all the births which take place are reported, is, we think, somewhat doubtful, though the number omitted may not be very large. The average proportion compared to the population, is about 4.42 per cent. per annum.

Upon running the eye along the columns of table B. we are struck with the variations appearing from year to year, not only in the totals, but in the respective proportions of the sexes. There is also a considerable deficiency conspicuous in the total for the year 1829, which induced us to suppose that a mistake had been somewhere committed, but upon the most careful examination of the original record, we found the returns complete from all the various practitioners, and were unable to perceive any error in the computation. It is a fact of the highest interest, that although the males at birth for the whole period exceed the females by more than 7 per cent. such is the greater ratio of mortality among them during the first years of life, that at the fifth year the excess of males is only about 5 per cent. whilst by the tenth year it has been so reduced that the excess is only about 1 per cent. Referring to the table exhibiting the population at different ages for the evidences of our representations, we shall not stop to indulge in the speculations which this subject seems to invite.

In consequence of some curious investigations made lately by M.

VILLERME, of Paris,\* we have been induced to construct a table of the births in Philadelphia for the last ten years, so as to present the amount of each sex per month, (Table C.) This was a very arduous and troublesome task, as from the manner in which the record is kept, we were obliged to refer to the separate statements made by the various practitioners in the respective years embraced by our table.† Having obtained the amount of the births for each of the months in the period mentioned, and calculated their sums, it was next necessary, in order to institute a fair comparison, to equalize them, by making all of the value of thirty-one days. In effecting this, we followed the rule given by M. Villermé, which consists in ascertaining for each of the short months the average number of births per day, and multiplying this sum by thirty-one. By pursuing this process, the following results were obtained, which we arrange in such manner as to give the highest place to the months presenting the greatest number of births, and the corresponding months of conception, which last are seen on the right.

Month.	Whole No. of Births.	Males.	Females.	Correspond. mos of Conception.
1. February	- 5996	- 3099	- 2897	- May.
2. September	- 5965	- 3112	- 2853	- December.
3. December	- 5937	- 3023	- 2914	- March.
4. January	- 5712	- 3012	- 2700	- April.
5. November	5652	- 2954	- 2698	- February.
6. March	- 5598	- 2896	- 2702	- June.
7. October	- 5567	- 2941	- 2626	- January.
8. August	- 5437	- 2798	- 2639	- November.
9. July	- 5221	- 2764	- 2457	- October.
10. June	- 4855	- 2523	- 2332	- September.
11. April	- 4805	- 2515	- 2290	- July.
12. May	- 4797	- 2503	- 2294	- August.

It would hence appear that the locality of Philadelphia is subjected to the influence of some causes, which, during a portion of the year, operate unfavourably upon the increase of its population by reproduction. These causes seem to prevail during the extreme heat of summer, and in the commencement of autumn, the months of August,

\* De la distribution par mois des Conceptions et des naissances de l'homme. Annales d'Hygiène Publique et de Médecine Légale.

† The sums of births per annum exhibited in this table, will sometimes be found less than those reported annually by the Board of Health. This arises from the rejection of some returns made by the quarter or year, instead of the month.



July, and September, standing lowest in the scale designating the months of conception.

As we are unacquainted with any circumstances connected with the social customs or institutions of the place, sufficient to account for the variation so obvious at different seasons in the births and conceptions, we feel ourselves constrained to adopt the explanation proposed by M. Villermé, who attributes it to the influence, either direct or indirect, of the annual revolution of the earth around the sun, or in other words, to the order of the seasons. It will no doubt be gratifying to the investigator of this novel subject, to have the main conclusion which he has derived from his extensive researches in Europe, confirmed by calculations made in this part of the globe. From an inspection of our statement, it will be seen that its results are in singular accordance with the observation of M. Villermé, “*c’est à dire, que les mois de Juillet, Août et Septembre, qui sont les plus chauds, offrent comparée aux autres mois de l’année, une diminution notable dans la force génératrice.*” But although the results of our observations correspond thus strictly with his in regard to the *minimum* of births and conceptions, they are found to vary in respect to the *maximum*, as will be seen by comparing our statement with that one of his general conclusions, which asserts that “*toujours et partout, à des variations près fort limitées, la fin du printemps, le commencement de l’été, offrent les plus grand nombre des conceptions,*” &c. As, however, the thermometrical observations made in this locality,\* will exhibit a striking difference between the climate and seasons of this part of America, and those of the various parts of the European continent comprehended in M. Villermé’s calculations, some difference in the results was to be naturally expected. Should similar investigations be made in other sections of our own country, which from its extent presents such diversity of climate, they will no doubt exhibit corresponding variations in the results, but still, we think, support M. Villermé’s leading principle, relative to solar influence upon the propagation of the human species.

Before we conclude our remarks upon this subject, we would invite attention to a fact which perhaps will go further to account for the variations in the number of births existing between the different months, than any other circumstance, independent of temperature.

An estimate made so as to include those three years of the series least affected by the epidemic causes we have adverted to, would present a different order in the months, from one made to include a like number of years most subject to these influences. Let us take for exam-

\* See Vol. I. of this Journal, art. Medical Statistics of Philadelphia, Table I.

ple the three last years of our series, viz. 1828, 1829, and 1830—during which the epidemic has been felt much more slightly than during the seven preceding years. Their order when arranged according to the plan previously adopted, would differ but little from that presented by the whole series, and would stand as follows, reckoning all the months to have thirty-one days:—

Month.	No. of Births.	Corresponding months of Conception.
1. September	2047	December.
2. February	1995	May.
3. December	1951	March.
4. January	1947	April.
5. March	1913	June.
6. November	1885	February.
7. October	1836	January.
8. August	1785	November.
9. July	1719	October.
10. April	1664	July.
11. May	1658	August.
12. June	1610	September.

When, however, we make a similar estimate for the three years, which, from their great mortality, we may suppose felt the epidemic influences in the highest degree, viz. 1823, 1824, and 1825, we find some variation, the months arranged according to the decreasing ratio of births and conceptions taking the following order:—

Month.	No. of Births.	Corresponding months of Conception.
1. September	1685	December.
2. December	1674	March.
3. October	1645	January.
4. February	1629	May.
5. January	1581	April.
6. August	1569	November.
7. November	1540	February.
8. July	1497	October.
9. March	1487	June.
10. April	1416	July.
11. June	1372	September.
12. May	1317	August.

In this last estimate we see but little change in the situation of the months presenting the extremes, or *maximum* and *minimum* of births and conceptions. We find, however, a sensible diminution in the proportion of conceptions for the months of June and October.

Now in the first of these months we know that the epidemic forms of disease seemed to revive for the season with great force, and continue until October. We therefore think it a demonstrable fact, that in addition to the principal influence which lessens fecundity in this locality, namely, that of high temperature, there has existed during the period embraced by our calculation, another retarding force connected with the late epidemic.

As the results of our observations are in accordance with those obtained by M. Villermé from extensive data procured in those parts of France subject to endemic influences, we do not think it necessary to pursue these calculations further.

We terminate this portion of our investigations with the following general conclusions:—

1. That the chief cause which operates in our locality in retarding the natural increase of the population, appears to be the extreme heat of summer and the insalubrity of the first months of autumn.

2. That another cause which has tended to check fecundity during the last ten years, may be traced to the epidemic influences to which the population of the environs of the town were subjected. This of course is not a regular, but merely an occasional cause.

3. That the prevalence of epidemics or extensive sickness among adults, tends not only to diminish population directly, by increasing mortality, but indirectly, by diminishing fecundity.

4. That upon examination of the births and deaths of particular years, the *maximum* of conceptions will almost invariably be found corresponding to the *minimum* of adult mortality, and vice versa, the *maximum* of deaths agreeing with the *minimum* of conceptions.

According to M. Villermé's investigations, the disparity existing between the births and conceptions of the different seasons is much more strongly marked in the country and small towns than in the large cities. We possess no data by which we can ascertain whether this observation is equally applicable to this country.

#### *Deaths.*

The proportion of deaths to the population for the last ten years is exhibited in table D, and proves greater than it has been at any period since regular records of mortality have been kept. The lowest rate was in the last year, (1830,) when it was one death in 42.94 inhabitants, or 2.32 per cent. of the population. The highest degree of mortality occurred in 1823, and was at the rate of one death in 30.5 inhabitants, or 3.26 per cent. of the population. The average of the whole period is one death in 38.87 inhabitants. These estimates are



made without reference to distinction of colour, and exclusive of still-born.

\* This ratio so far exceeds that of the fourteen preceding years, when it was one year as low as one death in 56.53 inhabitants, and on an average for the whole period, one in 47.86 of the population generally, and only one in about 51 of the whites, that we feel called upon to enter into some investigation of its causes.

Upon referring to the tables accompanying these and our former calculations, exhibiting the annual mortality, it will be seen that in the year 1818 a very sudden increase took place in the amount of deaths. An examination of the tables giving the particular diseases from which these occurred, shows that this increase may be traced for the most part to an unusual prevalence of fevers, inflammations, and bowel complaints, or in other words, to epidemic causes, which were felt with greatest violence from 1818 to 1826, and more especially in the years 1822, 1823, and 1824. It is a curious fact, that although the same influences which promoted fevers seemed to operate in producing an increase of bowel complaints, the mortality from this last source should not have diminished in a proportion similar to that of fevers, whilst with regard to inflammations there has been a striking increase with the subsidence of fevers. It is possible that the new nomenclature of the physiological school of medicine may have occasioned some of these last to be enumerated with the phlegmasiæ, but the number we are sure must have been

\* To make this more apparent, we subjoin the following abstract from the tables. The first years are added for the purpose of showing the ordinary mortality previously to the commencement of the epidemic.

Year.	Total mortality.	Fevers.	Inflam- mations.	Bowel complaints.	Consump- tion.	Dropsies.
1816	2225	193	229	153	434	156
1817	2167	211	205	229	549	149
1818	3609	492	195	283	596	171
1819	2979	277	265	363	459	231
1820	3189	525	275	454	446	269
1821	2161	402	289	380	438	194
1822	3334	498	284	461	488	243
1823	4372	744	339	562	536	241
1824	4284	647	402	297	576	221
1825	3539	362	338	362	519	270
1826	3845	421	447	415	587	242
1827	3659	365	481	384	523	219
1828	3971	373	483	429	581	253
1829	4001	260	631	394	638	287
1830	3948	228	506	361	636	281

very limited, as may be seen by referring to the particular kinds of inflammation.

In a former number of this journal we took some pains to show that the influence of the sickly air was expended upon that comparatively limited portion of the population living in the environs and outskirts of the town. With these, fever in some of its forms was almost universal, whilst in the more dense and well paved parts, the air seemed unusually healthy, and where remittents and intermittents were met with, they could almost invariably be traced to exposure to night air in the country or suburbs. Never was a stronger demonstration afforded of the resistance made by cities to the influence of country malaria than our late experience has furnished. Great as was the amount of sickness, it was confined almost entirely to the comparatively small proportion of population inhabiting the unpaved or ill-paved environs. Our observation on this and other occasions, has led us to ascribe this exemption for the most part to the pavements, which, by effecting a perfect draining, prevents exhalation, at the same time that it admits of the total removal of vegetable and animal matters, the sources of foul and unhealthy emanations. The chief motive for paving the streets and side walks, is usually convenience, but it has always appeared to us, that by far the most important object achieved by it was the preservation of health.

Whilst upon the subject of public hygiene, we cannot restrain ourselves from noticing another consideration connected with it, namely, ventilation, or a proper supply of pure unrespired air. By far the greatest proportion of the annual sickness and mortality of ordinary seasons is furnished by the narrow and confined alleys and courts existing in various parts of the town. The low terms upon which the small houses and rooms in such places can be obtained, causes them to be literally crowded with a class of population for the most part negligent of cleanliness, and it can occasion no surprize that there should be a great disparity between the proportions of sickness and mortality among these, compared with that which takes place in the portion living in larger dwellings, having a freer circulation of air. The difference just mentioned, though sufficiently obvious in adults, is most lamentably conspicuous among children. Notwithstanding the great numbers of these which die annually of cholera, we feel ourselves warranted in asserting that deaths from this disease are rare in houses with large and well-aired apartments. To one who in the capacity of physician to a dispensary or other charity, has been engaged in the arduous duties of attending the poor in their uncomfortable abodes, evidences of our assertions must be abundantly familiar.



The numerous instances wherein the mercenary calculations of individuals has tempted them to put up nests of contracted tenements in courts or alleys admitting but little air, and yet subjected to the full influence of heat, has often induced us to wish that there could be some public regulation by which the evil might be checked. Mankind have inhabited cities long enough to know from severe experience, that there are certain limits to the denseness of population, which when passed, always lead to disease and mortality. As we think every thing tending to the preservation of public health must be a fit subject for legislation, we do not see why a law should not be procured by which the undue crowding of population might be prevented, and the number and size of dwellings adjusted to superficial limits. There are at present municipal regulations intended as a protection against conflagration, by designating the materials of which houses shall be constructed; and if such precautions be deemed so important when property is the consideration, of how much more consequence would be those for the preservation of health and life.

It is common to attribute the greater mortality known to take place under ordinary circumstances in large towns among the poorer classes, chiefly to meagre or unwholesome food and immoderate indulgence in strong liquors. But in this country, where for a part of the year we are subjected to a degree of heat little if at all below that of the tropics, the influence of both these causes in the production of disease, is, in our opinion, insignificant, when compared to that of breathing air that has been previously respired, and which, moreover, is commonly charged with animal and vegetable effluvia. That the same diet and habits of life in the country or small towns, would not be attended with a degree of sickness and mortality corresponding to that found in the crowded portions of large towns, is, we think, beyond a doubt.

In Paris, comparisons instituted between the parts chiefly occupied by such as live at ease, with those inhabited by the poorer orders, would seem to show that the proportion of mortality is regulated less by the density of population, than by the opposite circumstances of ease and poverty. That this may be the case under the circumstances of climate and means of nourishment which exist there, we will not pre-

\* The results of the extensive and extremely interesting researches of M. Villot relative to the changes in the population of Paris, show that the three arrondissements presenting the smallest portion of mortality, namely, an average of one in forty-two of the population per annum, are precisely those recognised as the richest, whilst the three presenting the greatest rate, namely, about one in twenty-five, are noted as the poorest.

tend to deny; but in this country, where absolute want of food, and that of the best kind, is unknown, the evils of poverty we are convinced come from different sources, and more especially from those we have mentioned.

Those desirous of examining into the immediate sources of the mortality of Philadelphia for the four years from 1827 to 1830 inclusive, are referred to table E. which contains the amount from each particular disease, or other cause. We have thought it unnecessary to include the preceding years, there being a similar calculation for them in the tables previously given in this Journal.

An examination of our records of mortality for the last twenty-five years, will show that during the whole time, the number of deaths from *malignant* or *yellow fever* is only about 125. This information may appear strange, even at home; but how much more so abroad, in Europe for instance, where the dread of this disease has alone perhaps deterred many from visiting the country, and raised obstacles to our commerce by the enforcement of vexatious quarantine regulations in many ports. The simple fact we have here stated relative to our exemption from yellow fever, should, we think, entitle our vessels to general pratique, or at least lessen very greatly the detention to which they are so frequently subjected, especially in the South of Europe.

To what this great exemption for so long a period is to be ascribed, and what share of the happy influence has been exerted by quarantine regulations, more general and better paying, with greater cleanliness, are questions it would be very interesting to solve.

The various periods of life at which the deaths occurred, are exhibited in table G. from which it appears that the deaths of such as were under the

1st year,		constitute about 48 per ct. or nearly one-half of all those under the 20th year, and
"	"	22 per ct. of the mortality at all ages.
2d	"	66 per ct. of all under the 20th year, and about
		31 per ct. of the mortality at all ages.
5th	"	81 per ct. of all under the 20th year, and about
		55 per ct. of the mortality at all ages.
10th	"	69 per ct. of all under the 20th year, or about
		42 per ct. of the mortality at all ages.

15th year, constitute about 93 per ct. of all under the 20th year, and  
about

44 per ct. of the mortality at all ages.

20th      "      "      47      "      "      "

All over the

50th year, constitute about 40 per ct. of the mortality at all ages.

40th      "      "      28      "      "      "

50th      "      "      18      "      "      "

60th      "      "      11.3      "      "      "

70th      "      "      6.2      "      "      "

80th      "      "      2.3      "      "      "

90th      "      "      0.7      "      "      "

100th      "      "      0.001, or about 1 in 1000.

For the purpose of ascertaining whether any influence was exerted by the late epidemic visitation upon the mean duration of human life as formerly determined, we have included a series of ten years in our table. The result of the estimate shows a diminution in the mean duration from that exhibited by our former calculations, which were founded upon data furnished by the fourteen previous years, namely, from 1807 to 1820 inclusive. The average for the last ten years is 28.53, whilst that formerly presented for the period mentioned, was 29.40. In the year 1823, when the greatest mortality occurred, the mean duration fell as low as 26.67. It is not pretended, as we have elsewhere stated, that calculations founded on such data as we possess, can give the mean duration of human life for Philadelphia with precision, one important obstacle to the attainment of which is, that the periods of mortality designated are not sufficiently numerous. It is however the nearest approach that present circumstances will admit us to make towards ascertaining this important point relative to the *laws of mortality*. For the purposes of regulating estimates of risk and adventure, it would we think for several reasons, afford a safe minimum.

The mean duration of life for that portion of inhabitants residing in the more central parts of the town, in good houses, and abundantly provided with all the necessaries of life, must be much above that of the general average for all conditions, including the blacks as well as the poorer class of whites. Now, as these last, though they furnish by far the largest proportion of mortality, and consequently present the greatest risks, seldom apply for life insurance or annuities, it is evident that ventures founded upon estimates of the chances of life in which they are included, must afford great profit, insurance being commonly effected upon that class in which the average value of life is much the greatest.



With regard to the mortality of particular diseases, as exhibited in table F. we have not much to add to what we have already mentioned either on this or the former occasion. It has been shown that fevers, bowel complaints, and inflammations have been much more prevalent within the period included in the present calculations than in that embraced by the preceding. This will perhaps be most strikingly demonstrated thus:—

The average mortality of *fevers*, from 1807 to 1817 inclusive, was in the proportion of 1 in 13, or 7.7 per cent. of the whole mortality. But since that time, and from the year 1818 to 1828 inclusive, the average has been as great as 1 in 7.4, or 13½ per cent. of the whole mortality, nearly double its usual rate.

The average proportion from *bowel complaints* for the same periods has altered but little, notwithstanding the great increase observed in their number since the commencement of the epidemic. For the first mentioned period it was one in 8.3 or 12 per cent. of the total mortality, and for the last, 1 in 8.6 or 11.5 per cent. of the mortality.

The proportional increase in the mortality from *inflammations*, in the last period though more apparent than that of bowel complaints, is much less marked than that of fevers. The average of the first eleven years is 1 in 11.8 or 8.4 per cent.; that of the following eleven years, 1 in 9.9, or 10 per cent. During the last five years, viz. from 1826 to 1830 inclusive, the average has increased so as to constitute 13 per cent. of the entire mortality, which it will be seen is very nearly the proportion of fevers when these were most prevalent.

Of *dropsies*, the average proportion for the first period is 1 in 16, or 6.2 per cent. of the whole mortality, which rate was slightly increased during the last or epidemic period, so as to constitute 1 in 15, or 6.6 per cent. of the entire mortality. During the last five years, which, as already shown, has been distinguished by the prevalence of inflammatory disorders, the proportional mortality from dropsies, has been about equal to what it was during the greatest prevalence of fevers, proving that the agency of both forms of disease in the production of hydropic affections is about equal.

Contrary to what we have found to be the case in regard to the proportional mortality from the last mentioned diseases, that from *consumption*, compared with the general mortality, has rather diminished during the existence of the epidemic influences. Thus we find the average for the eleven years from 1807 to 1818, inclusive, to be 1 in 6.3, or 15 per cent. whilst for the following eleven years, it was as in 6.8, or 14.6 per cent. During the last five years, that is to say, since the subsidence of fevers and increase of inflammatory disorders, the average mortality from consumption, compared to the general

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mortality, has been 1 in 6.5, or 15.3 per cent. It must not be forgotten that in estimating these several ratios, the *still-born* were deducted from the yearly sums of mortality; had they been retained, as they often are in such calculations, the proportional mortality of particular diseases would of course appear much less.

Estimates formerly given exhibited the influence of the months and seasons upon the mortality both of adults and children. It was shown from a series of observations including twenty years, how the relative mortality of the months for adults stood, when arranged according to the order of their decreasing mortality. As we did not then show the respective proportions of the months when all made equal to thirty-one days, we now adopt this measure. The result for the twenty years specified is the following order and distribution:—\*

1. August - - -	6632	7. April - - -	4370
2. July - - -	5887	8. November - - -	4361
3. September - - -	5309	9. February - - -	4283
4. June - - -	4699	10. January - - -	4112
5. October - - -	4554	11. December - - -	4072
6. March - - -	4371	12. May - - -	3892

Arranged according to the mortality of adults alone, and supposing them all to consist of thirty-one days, the months placed in the order of their decreasing mortality, would stand thus:—

1. August - - -	2845	7. November - - -	2432
2. September - - -	2716	8. July - - -	2429
3. April - - -	2609	9. June - - -	2409
4. October - - -	2560	10. January - - -	2390
5. February - - -	2501	11. December - - -	2252
6. March - - -	2480	12. May - - -	2224

The relative mortality of the several months for those under twenty years of age, would stand, according to a similar arrangement, thus:—

1. August - - -	3787	7. March - - -	1891
2. July - - -	3458	8. December - - -	1820
3. September - - -	2591	9. February - - -	1782
4. June - - -	2290	10. April - - -	1761
5. October - - -	1994	11. January - - -	1722
6. November - - -	1929	12. May - - -	1668

\* See Table IV. of our former series of calculations. It may be proper to observe that the present is one of the few instances, in which the *still-born* have not been deducted in our estimates of mortality. As, however, our object is to show the relative, and not the actual mortality, their exclusion would not have altered the results.

The influence of the seasons in the production of the mortality of both adults and children in our locality, is rendered strikingly conspicuous by this mode of calculation. In the estimates for children, the disparity existing between the months exhibiting the maximum and minimum, or greatest and least proportions of deaths, compared with the difference between the months showing the like proportions for adults, demonstrates most forcibly how much more under the influence of the seasons those in the early periods of life are, than such as have arrived at maturity. With adults the difference in these extremes is only about 21 per cent. whilst that of children is no less than 55 per cent. For the purpose of investigating this interesting subject in still greater detail, we have constructed table H. which exhibits the infantile mortality per month at the respective ages or periods of life. A period of five years was deemed quite ample for this purpose, and instead of returning to the time embraced in our first, we have taken them from the last years of our estimates. The periods designated in our table are four—the first giving the mortality under the first year; the second, that occurring between the first and second years; the third, that between the second and fifth years; and the fourth and last, which embraces no less than fifteen years of life, namely, from the fifth year to the twentieth. The proportion of still-born were deducted from the mortality under the first year.

The months of the five years *equalized* and exhibited in the order of their decreasing mortality, with their respective proportions, stand thus:—

	Under 1 year.	Between 1 and 2	Between 2 and 5	Between 5 and 20.	Totals.
1. July	836	249	117	120	1322
2. August	546	317	120	165	1148
3. Sept.	377	221	140	185	923
4. June	510	148	84	105	847
5. February	382	109	123	131	745
6. October	324	127	117	153	721
7. March	322	119	122	138	701
8. April	342	107	125	122	696
9. Dec.	269	90	114	135	608
10. Nov.	267	90	114	132	603
11. January	281	81	102	109	573
12. May	250	98	107	107	562
	4706	1756	1385	1602	9449

It hence appears that by far the greatest mortality occurring in



childhood takes place in July, June, and August, months distinguished from all others by their high temperature, and that heat is the great enemy of early life in our city.\* It is interesting to observe that the destructive influence of this agent has lost much of its power after the first year of life, and that after the second year it is scarcely perceptible, there being but little variation in the columns representing the monthly mortality after this period.

If we take the mortality for the months of June, July, and August, we find that the proportion occurring under the second year of infancy is about four times greater than that which occurred during the same months for the whole eighteen succeeding years of life; whereas, for the three months of November, December, and January, the amount of mortality under the two first years of life, is but little above that of the eighteen succeeding years.

It will be observed that the month of September stands among the highest months in the scale of infantile mortality, differing however from those with which it is associated, by having a larger proportion of deaths distributed under the later periods designated.

For the diseases proving most frequently fatal to childhood, with the ages at which they occur, we refer to Table VIII. of our calculations formerly published.

At the time of making our first series of statistical calculations we were so deficient in the data necessary for ascertaining the correct proportion of mortality for the black population separately, that we were compelled as we then stated, to appeal to conjecture for some of them, or abandon the interesting subject entirely. We are now happy to have it in our power to place our estimates upon a better foundation, possessing not only a longer period for observation, but being furnished through the census taken last year with the exact proportion of this class of the population. In Table E. we have exhibited the respective proportions of both white and black mortality and population, with the annual ratio of deaths in each, during the ten years from 1821 to 1830 inclusive. This estimate differs in some respects from the one formerly given, one of which is, that the proportion of still-born has been deducted, a circumstance calculated, as we have before observed, to lessen the rate of mortality compared to population, but to increase the proportion from particular diseases compared with the whole.

\* For the average temperature of these and other months in Philadelphia, we refer to Table I. of our former calculations.

The result of our calculations shows a disparity in the proportions of white and black mortality, compared with the population, which though not quite equal to what we had computed it for the five years succeeding 1820, is still most appalling for the African descendants. The greatest mortality among these in any single year was in 1820, when it amounted to 1 death in 16.9 inhabitants. The smallest in 1830, when the ratio was 1 in 27.2. The average for the whole ten years is 1 in 21.7, whilst that for the whites alone during this unusually sickly period is 1 in 42.3.\* The lowest rate of mortality for the whites occurred in 1821, and was 1 in 49.1 inhabitants, the highest in 1823, when it amounted to 1 in 33.8. We regret exceedingly that the black mortality was not recorded separately for some time previous to 1820, as we should then have been enabled to ascertain its exact proportion in the years when a fever prevailed in some parts of the town, which confined its attacks to the blacks alone, sparing the whites that even lived among them.\*

The fact last mentioned is of itself sufficient proof of the existence of some peculiarity in the African constitution, which distinguishes it from that of the white, and when connected with the opposite circumstances of their much greater exemption from some other varieties of fever, to which whites are extremely liable on the application of the causes, as for example, the yellow and even intermittent forms, the evidence is rendered still more positive.

The late Joseph M. Paul, of this city, whose ardent philanthropy was actively directed towards the African race, and who consequently took a particular interest in every thing calculated to shed light upon or ameliorate their condition, undertook the year previous to his death, to trace out the particular diseases which occasioned the mortality of the coloured population. But this tedious task, which consisted in consulting each individual certificate deposited at the Health Office, he was forced by declining health to abandon, after completing only one year, namely, 1827, the tabular view of which, showing the mortality for each week, he had the kindness to transmit to us. The investigation of the sources of the greater mortality of

\* Accounts of this singular epidemic may be found in Dr. Jackson's paper in the Philadelphia Journal of the Medical and Physical Sciences, Vol. I. No. II. p. 321, and in Vol. III. No. VI. p. 193, of the same periodical. The disease, which was of a bilious and remittent character with typhoid symptoms, made its appearance in May, and extended with the increase of warm weather, terminating as an epidemic in September. The deaths from it in the Alms-house, whither a great many were carried, were about one in six.



the blacks affords a highly interesting subject, and had time allowed we should have continued the labours commenced by our deceased friend. But this has not been permitted us, and we are consequently obliged to confine ourselves on the present occasion to the results furnished by a very limited period, hoping yet to find leisure to extend the observations so as to include other years, or to see the subject taken up and completed by some other person.

The diseases comprehended in the statement furnished us, with the respective mortality of each, are as follows. The names of some with few or no deaths are retained, to show that the proportion set down to them in the general bills of mortality, must belong for the most part or altogether to the whites. We have adopted the alphabetical order:—

Diseases.	No. of Deaths.	Diseases.	No. of Deaths.
Apoplexy - - -	2	Brought over - - -	379
Catarrh - - -	7	Insanity - - -	1
Cholera - - -	16	Mania a potu - - -	3
Consumption - - -	92	Measles - - -	0
Convulsions - - -	37	Old age - - -	19
Debility - - -	28	Palsy - - -	1
Dropsies - - -	13	Small Pox - - -	56
Drowned - - -	3	Still-born - - -	38
Drunkenness - - -	8	Sudden - - -	22
Dysentery and Diarrhœa -	29	Unknown - - -	46
Typhus Fever - - -	34	Various - - -	143
Other Fevers - - -	89		—
Hives - - -	4	Total - - -	746
Hooping Cough - - -	8	Still-born - - -	38
Inflammation of the Brain	0		—
Inflammation of the Lungs	9	Exclusive of Still-born	708
	—		—
Carried over - - -	379		

From this view it appears, that of the total mortality of the blacks, in the year 1827, namely, 708, exclusive of still-born, the proportion from consumption was 1 in 7.6, or 13 per cent.; from fevers 1 in 5.7, or 17 per cent. which it will be seen, is a much larger proportion than the deaths from fevers bore to the general mortality for the same year, viz. 1 in 10; and from bowel complaints 1 in 15, or 6.3 per cent. The number that died in the alms-house was 155.

The actual proportion of deaths for each month is as follows:

1. January	-	-	-	52	7. July	-	-	-	62
2. February	-	-	-	44	8. August	-	-	-	58
3. March	-	-	-	38	9. September	-	-	-	63
4. April	-	-	-	44	10. October	-	-	-	91
5. May	-	-	-	40	11. November	-	-	-	103
6. June	-	-	-	55	12. December	-	-	-	96

When all made equal to thirty-one days, and arranged according to their decreasing mortality, with their respective proportions, the months assume the following order:—

1. November	-	-	-	106	7. June	-	-	-	57
2. December	-	-	-	96	8. January	-	-	-	52
3. October	-	-	-	91	9. February	-	-	-	48
4. September	-	-	-	65	10. April	-	-	-	44
5. July	-	-	-	62	11. May	-	-	-	40
6. August	-	-	-	58	12. March	-	-	-	38

Of the number 746 actually reported, 401 were males, and 345 females, the deaths of females being about 1 in 14, and of females 1 in 22 of their respective proportions of the population. That the mortality of males should thus be found to exceed that of the females 13 per cent. is a result not to have been expected, when it is considered that the female portion of the black population exceeds the male 32 per cent.

The ages or periods of life at which the mortality occurred are as follows, viz.:—

Under 2 years, (still-born excluded)	-	-	-	-	190
Between 2 and 10	-	-	-	-	56
					<hr/>
All under 10	-	-	-	-	246
Between 10 and 20	-	-	-	-	43
					<hr/>
All under 20	-	-	-	-	289
Between 20 and 30	-	-	-	-	110
“ 30 and 40	-	-	-	-	113
“ 40 and 50	-	-	-	-	91
“ 50 and 60	-	-	-	-	41
“ 60 and 70	-	-	-	-	25
“ 70 and 80	-	-	-	-	19
“ 80 and 90	-	-	-	-	11
“ 90 and 100	-	-	-	-	6
100 and over	-	-	-	-	3
					<hr/>
All over 20	-	-	-	-	419

The proportion of deaths at particular periods of life compared with the general mortality, may be reckoned thus:—

All under 2 yr's constitute 1 in 3.7 or 28 per ct. of the whole mortality.

" 10	" 1 in 2.8 or 34	" "
" 20	" 1 in 2.4 or 40	" "
" 30	" 56	" "

In concluding our present statistical labours, we would remark that it has been our object to supply facts of a general character, rather than to pursue details through all their bearings. To have dwelt more minutely upon the many interesting topics developed in the course of our researches, would, we feared, have overcharged the subject, and deterred many from pursuing it, whose partiality for statistical investigations are not very strong. To those fond of such inquiries we have presented abundant materials and left ample room for their employment, as the results we have drawn from the data are only the most prominent that presented themselves. We have seldom indulged in comparisons with other places, and never with our neighbouring cities, our object having been to present facts as they exist, whether these be favourable or unfavourable to the character of our locality for salubrity. Persons who undertake estimates for other places, are often led to the commission of errors, unintentionally of course, from not being acquainted with some local circumstances calculated to affect the results very materially. Such causes have frequently led to mistakes with regard to the proportional mortality of Philadelphia. We have lately seen with some regret a repetition of them in a respectable cotemporary journal, in which the population of Philadelphia is represented about 6400 less than actually exists within the limits of the bills of mortality.\* It is needless to add that such an error in the commencement, completely invalidates the whole series of comparative estimates. In such matters, partiality for a favourite city should never be allowed to interfere, and lead to the concealment or palliation of evils where they exist. On the contrary, these should as far as practicable be fully exposed to view, so as to lead when possible, to their removal or correction. Without such an application, medical statistics would lose half their value, and instead of being, as it actually is, a highly practical, sink to the level of a mere speculative branch of knowledge.

\* New York Medical and Physical Journal, Vol. I. p. 436.

TABLE A.

*Abstract from the Census of the City and County of Philadelphia, taken in 1830, by order of the General Government, showing the number and description of Inhabitants within the built parts of the town.*

WARDS AND DISTRICTS.	WHITES.																										
	MALES.													FEMALES.													
	Under 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100, &c.	Under 5	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100, &c.	TOTAL.
City Wards.	4608	3557	3323	4547	7589	4423	2580	1374	685	243	84	16	2	4500	3847	3936	4944	8763	5154	2963	1833	1064	438	128	24	5	70662
Northern Liberty } Wards } Southwark, and } other Incorpo- } rated districts. }	2253	1638	1423	1585	2886	1627	974	456	268	69	23	1	0	2185	1666	1535	1674	3203	1934	1096	711	467	183	50	1	1	27921
N. Liberties, un- } incorporated } Penn Township }	4219	3965	2885	2889	4646	3508	1621	678	298	100	18	6	1	3853	3567	2794	3172	4943	3343	1715	888	475	163	48	9	1	49835
	183	155	185	134	241	145	97	66	29	5	1	0	0	197	140	152	117	220	130	79	56	34	10	4	0	0	2380
	197	151	132	152	243	158	89	60	23	9	3	2	0	184	148	141	136	255	138	70	54	35	12	1	1	0	2401
	11460	9466	7948	9503	15605	9861	5361	2644	1303	426	129	25	3	10919	9368	8578	10040	17384	10690	5923	3542	2075	806	231	35	7	153169



TABLE A.—CONTINUED.

WARDS AND DISTRICTS.	BLACKS.													TOTAL WHITES AND BLACKS.
	MALES.						FEMALES.						TOTAL.	
	Under 10	10 to 24	24 to 36	36 to 55	55 to 100	100, &c.	Under 10	10 to 24	24 to 36	36 to 55	55 to 100	100, &c.		
City Wards	975	1076	1092	695	179	8	1041	1872	1606	894	351	7	9796	80458
Northern Liberty Wards	119	111	117	71	31	0	135	170	137	79	32	0	1002	28923
Southwark, and other Incorporated districts	436	400	445	318	137	6	446	546	538	288	100	5	3665	53470
N. Liberties, unincorporated	12	7	10	6	3	0	9	10	6	10	0	0	73	2453
Penn Township	7	20	14	7	5	0	8	16	13	9	7	0	106	2507
	1549	1614	1678	1097	355	14	1639	2614	2300	1280	490	12	14642	167811

TABLE B.

*Births per annum in Philadelphia, from 1821 to 1830 inclusive, with the respective proportions of the Sexes.*

Year.	Males.	Females.	Totals.	Excess of males per annum.	Excess of males per cent.	Proportion of Births to Population.
1821	2630	2417	5047	213	8.	Average proportion of births to the population 4.42 per cent. or as 1 to 22.6.
1822	3021	2701	5722	320	10.5	
1823	2977	2836	5813	141	4.7	
1824	3062	2771	5833	291	9.5	
1825	3444	3182	6626	262	7.6	
1826	3526	3219	6745	307	8.7	
1827	3581	3452	7033	129	3.6	
1828	3694	3506	7200	188	5.	
1829	3638	3357	6995	281	7.	
1830	3996	3632	7628	364	9.1	
	33569	31073	64642	2496		

TABLE C.

Exhibiting the Births in Philadelphia, for each month of a series of ten years; namely, from the year 1821 to 1830 inclusive, designating the numbers of each sex.

YEARS.	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1821	245	297	219	186	242	206	189	207	185	167	195	177	209	185	225	218	247	217	225	184	239	212	235	225
1822	267	236	285	214	257	232	291	178	250	217	241	182	270	211	242	232	239	242	267	256	297	242	265	222
1823	299	266	250	248	238	221	199	291	186	215	291	209	267	246	264	254	279	235	266	269	269	221	253	282
1824	279	228	274	242	234	218	224	211	227	195	235	213	239	206	245	205	230	270	296	234	238	238	259	265
1825	268	241	290	269	265	281	286	250	276	250	235	235	267	252	303	309	294	265	314	275	272	255	325	311
1826	325	297	286	252	349	281	253	196	228	241	181	211	267	273	312	397	285	288	276	250	280	266	329	349
1827	307	289	266	267	325	304	246	237	309	251	259	236	287	272	274	286	310	331	331	317	315	309	346	341
1828	322	307	320	299	352	325	278	261	286	277	282	264	295	298	338	391	321	295	336	271	328	301	347	318
1829	350	295	305	315	324	302	269	246	281	236	249	234	289	249	281	253	262	282	317	281	274	269	328	292
1830	370	325	323	303	310	302	318	239	391	274	264	266	324	274	319	293	334	337	313	318	317	396	338	328

TABLE D.

*An estimate of the proportion of Deaths in the City and Suburbs of Philadelphia to the Population, from the year 1821 to 1830 inclusive, showing the rate for each year, together with the average of the series. Note. Still-born excluded.*

Year.	Annual Mortality.	Population for each year.	Proportion to Population.	
			one in	per cent.
1821	2961	124934	42.19	2.37
1822	3334	129253	38.76	2.57
1823	4372	133721	30.58	3.26
1824	4284	138343	32.29	3.09
1825	3539	143126	40.44	2.47
1826	3845	148073	38.56	2.59
1827	3659	153300	41.89	2.38
1828	3971	158488	39.90	2.50
1829	4001	163960	40.99	2.44
1830	3948	169536	42.94	2.32
			10) 388.54	25.99
Average mortality per annum			38.85	2.59

TABLE E.

*An estimate showing the respective Mortality of the White and Coloured portions of the Population of Philadelphia, from the year 1821 to 1830, inclusive, exhibiting the proportions in each year, and the average for the whole period. Still-born excluded.*

Year.	Annual Mortality.		Population for each year.		Proportion of Deaths to Population, as 1 in	
	Whites.	Blacks.	Whites.	Blacks.	Whites.	Blacks.
1821	2320	642	114065	10869	49.1	16.9
1822	2813	521	118008	11245	41.9	21.5
1823	3612	760	122088	11633	33.8	17.5
1824	3598	686	126308	12035	35.1	17.5
1825	3078	461	130675	12451	42.4	27.0
1826	3353	492	135191	12882	40.3	26.1
1827	2954	705	139963	13337	47.4	18.9
1828	3314	657	144700	13788	43.6	20.8
1829	3400	602	149696	14264	44.0	23.7
1830	3405	543	154737	14799	45.4	27.2
					423.0	217.1
Average of the ten years					42.3	21.7

TABLE F.

Exhibiting the Principal Causes of the Mortality in Philadelphia, for the four years from 1827 to 1830 inclusive.

YEARS.	Whole mortality per annum exclusive of still-born.	Still-born.	Bowel Com- plaints.				Fever.							Inflammations.											Total of Inflammations.	Convulsions.					
			Consumption.	Cholera.	Diarrhea and Dysen- tery.	Totals.	Bilious and Remittent.	Inflammatory.	Typhus and Nervous.	Intermittents.	Malignant.	Undesignated.	Totals of the foregoing fevers.	Puerperal.	Hectic.	Scarlet.	Inflam. of Or- gans of Respira- tion and Pleura.						Inflammations of the Abdominal Cavity.								
																	Inflam. of Lungs.	Pleurisy.	Bronchitis.	Catarrh.	Totals.	Inflam. of Bowels and Stomach.	Peritonæum.	Liver.			Spleen.	Kidney.	Bladder.	Cervix.	Totals.
1827	3659	286	523	239	145	884	133	1	104	14	0	113	365	10	4	1	158	12	23	84	277	99	7	41	1	0	4	0	152	486	268
1828	3971	321	581	299	139	1029	173	2	59	21	0	118	373	7	5	0	143	5	27	49	224	125	19	39	0	4	1	1	189	483	315
1829	4001	293	638	257	137	1094	106	2	66	12	1	73	260	16	5	9	209	16	37	60	322	127	21	42	0	0	2	6	198	631	269
1830	3948	302	636	236	125	1061	81	1	63	9	0	71	228	15	5	10	149	9	46	30	234	132	18	25	1	0	5	1	182	305	306



TABLE 1.—CONTINUED.

[illegible]

TABLE I. CONTINUED.

YEARS.	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
Drunkennes.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

**IDENTITY**

*The ages or periods of life at which the Deaths in Philadelphia, have occurred in each year of a series of 10 years; viz. from 1821 to 1830 inclusive, together with the average mean duration of life for each year, and for the whole period.*

[illegible]

TABLE II.

Showing the Deaths per month throughout the early period of 3 years, namely from the year 1826 to 1830 inclusive. Still-born excluded.

YEARS.	January.			February.			March.			April.			May.			June.				
	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.				
1826	49	11	11	22	73	26	22	31	36	99	36	23	39	25	31	29	66	31	18	20
1827	51	19	18	21	71	23	22	18	18	54	18	23	32	16	13	11	106	27	17	19
1828	60	14	22	23	61	11	23	16	23	37	16	19	53	17	18	19	114	40	11	18
1829	89	17	24	19	72	21	23	28	33	73	15	25	63	20	25	23	77	24	45	23
1830	62	17	21	24	67	18	21	17	32	66	17	13	61	11	18	25	131	18	20	22
•	281	81	102	109	316	99	111	138	331	101	121	118	230	93	107	107	491	143	81	102
Totals per mo.	57.2	16.2	20.4	21.8	63.2	19.8	22.2	27.6	66.2	20.2	24.2	23.6	46.0	18.6	21.4	21.4	98.2	28.6	16.2	22.0

TABLE II. CONTINUED.

YEARS.	July.			August.			September.			October.			November.			December.			
	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 20.			
1826	137	63	82	14	103	55	16	25	51	33	21	28	47	19	15	25	41	19	22
1827	150	36	22	30	101	37	13	43	61	11	18	24	44	13	24	33	54	14	25
1828	193	63	23	23	109	41	11	36	64	31	31	31	61	29	27	33	67	20	22
1829	135	34	14	18	123	47	23	31	81	23	23	23	52	13	20	25	55	23	30
1830	199	51	27	23	117	65	13	24	71	33	15	15	32	18	17	22	52	23	24
	836	249	117	120	516	317	120	163	324	127	117	117	239	87	110	128	269	96	114

ART. II. *Case of Immobility of the Jaw and Tuliacotion Operation.*  
By VALENTINE MOTT, M. D. &c. &c. [With a Plate.]

ON the 7th of April, 1831, I was consulted in the case of Miss Mary Park, aged seventeen, of Southbridge, Massachusetts.

Her attending physician, Dr. SAMUEL HARTWELL, gave the following relation of the case. "In the autumn of 1822, she had an attack of typhus fever: the symptoms were mild in the commencement of the disease, and nothing unusual occurred until the middle of the third week, when tumefaction and redness were discovered on the left cheek, accompanied with slight delirium and general aggravation of fever.

"At the end of the third week, a dark vesicle, about the size of a pea, appeared at the angle of the mouth, announcing the existence of phacelus, and in a few days extended to about two inches in diameter upon the side of the face. A crisis of fever now supervened, which was followed by sloughing of the whole gangrenous portion, leaving the teeth and gums exposed. Upon its cicatrization the jaws remained immoveably fixed, being apparently tied together by a ligamentous band within and about the cicatrix. Her food was introduced into the mouth through a space formed by the removal of a tooth on the right side. The first set of teeth and the alveolar process of the diseased side, were detached by caries. Most of the second teeth were developed in a few years afterward.

"No mercury was used in the treatment of the fever. Her general health is now very good."

Her countenance was much disfigured, and presented the appearance represented in Plate I. fig. 1.

As the only means of permanently overcoming the closure of the jaw, was the removal of the cicatrix, I determined upon excising and replacing it by sound integument from the face and neck.

Accordingly on the 8th of April, assisted by Dr. VACHE, and in the presence of Drs. HARTWELL, BARROW, WILKES, HOSACK, and several others, I performed the operation.

It was commenced by carrying an incision from a little within the upper angle of the mouth, around the outer margin of the cicatrix, to a little within the lower angle of the under lip, and by the immediate removal of the newly-formed parts included within it. The adhesions between the jaws were next divided, which enabled me in consequence of the relaxation thus produced, to insinuate between the



teeth of the opposite side, the point of the lever used in my former cases, with which I finally succeeded in opening the mouth.

This point accomplished, the lips were brought together at the angle of the mouth by a suture, and I proceeded to detach a portion of integument sufficiently large and of corresponding shape to replace the part removed. See dotted lines, Plate I. fig. 1. It was turned into the space it was intended to fill, leaving a tongue three-quarters of an inch in breadth, connected with the adjacent part and sufficient for all the purposes of circulation. The cut edges were adjusted with extreme accuracy, by means of interrupted sutures and adhesive straps: the lower wound was contracted as much as possible by adhesive plasters, and the whole covered with lint, compress, and bandage.

Previous to the operation she took sol. sulp. morphine, double strength of Majendie's formula, gtt. xiv. The operation occupied about an hour, and was sustained with a firmness peculiar to the female sex.

*Evening.*—Had been sick at her stomach, and vomited some coagulated blood, which had no doubt been swallowed during the operation.

*April 9th.* Found her sitting up at the side of the bed. She felt, she said, very comfortable, and had passed a good night. Hardly any perceptible swelling of the face. As far as the parts can be seen all looks favourable. Ordered her a dose of sulph. magnesicæ. She can depress the lower jaw, by the effort of the will, to the extent of about half the width of the finger. I advised her to continue the motion of the jaw, from time to time, as much as the soreness at the angle of the mouth would permit.

*10th and 11th.* Continues to do well.

*12th.* Some little tumefaction under the eye, but she makes no complaint. Directed an emollient poultice to the hard dressings upon the wounds on the neck.

*13th.* Several poultices have been applied to the neck, which have softened the lint; upon carefully removing it and the plasters, the wound was again dressed in the same manner.

*14th.* Complains of a little head-ache from not sleeping well last night. Felt great comfort from the removal of the stiff dressings yesterday. Bowels are in a good state. Cannot say to what the head-ache is to be attributed; she thinks it owing to the loss of sleep last night. The swelling of the cheek has subsided. Changed the lint again to day.

13th. Found her in bed this morning, with pains in her limbs generally, and with some swelling of the right knee, and tenderness to the touch; passed a bad night; her pulse is much more frequent than natural. Is not aware that she ever had rheumatism before. Directed general and local treatment for her disease. She makes no complaint of her face, which in all respects is very promising. I removed three of the stitches from around the angle of the mouth, and reapplied lint and plasters.

16th. Still in bed. Has less pain and swelling in the knee, but more in the foot and ankle; generally she feels better. Removed another stitch from the lower part of the patch. The wound of the neck looks well; dressed it with ungt. resinæ and plasters.

17th. To-day she is generally better, but feels most pain and tenderness in the knee and ankle of the other leg. Says her face feels very comfortable. I removed three stitches from the upper part of the patch, and for the first time all the plasters, and washed the whole surface. Adhesion seems to have taken place at every point of the flap. Dressed the face as yesterday.

18th. Every part of the flap appears to have united. Dressed the wounds with dry lint. Advised her to move the lower jaw a little downward, every day several times. The rheumatic affection is seated in the right wrist and fingers. Ordered the use of tinct. colchici.

19th. Passed a better night; but both arms are now nearly useless. Consented to-day to be bled. Repeated the infus. sennæ as a cathartic; dressed the face, which looks very well.

20th. Feels generally better. Both arms still much affected. Drew the edges of the wound in the neck together with adhesive straps. Directed the tinct. colchici to be increased.

21st. In all respects better; a slight rheumatism yet continues in the left hand and arm. The colchicum has produced some cathartic action on the bowels. I dressed the face and wound as yesterday; directed her to open the jaw more frequently; and to continue the colchicum.

22d. Found her sitting up, and says she is more comfortable. The left hand and wrist still a little tumefied and painful. Face and wound continues to improve; dressed them as yesterday. Has more motion in the lower jaw.

23d. Is free from all pain to-day, and feels quite well again. Ordered the colchicum to be discontinued. Dressed the wound as before.

25th. Continues free from rheumatism. The wound improves, and was dressed as yesterday. The jaw moves more freely.

*May 12th.* Patch in the cheek entirely healed, (see Plate I. fig. 2.) The wound in the neck is nearly closed. She can open the jaws sufficiently wide to admit solid food.

*14th.* She leaves town to-day in good spirits, and delighted with the result of the operation.

Although I have before often operated for immobility of the jaw, and with the happiest results, and have once removed a deformity occasioned by a hole in the cheek, by the Taliacotion method, in the New York Hospital, with perfect success, I have never before seen it necessary to combine both operations in one individual; and the gratifying termination of this long and arduous case, is a convincing proof of the excellence of the means employed, and of the power of art in repairing the ravages of disease, and in relieving its distressing consequences.

*25 Park Place, New York.*

N. B. A letter was received from Miss P. by the lady with whom she resided here, in which she stated her health to be excellent, the jaw to have acquired increased motion, and her friends much pleased with her improved appearance.—*July.*

**ART. III.** *Case of Immobility of the Jaw, successfully treated by Professor Mott's Complicated Lever, and a Modification of his Operation.* By JESSE W. MIGHELS, M. D. of Maine.

IN June last, J. T. of Hebron, Oxford County, aged twenty, called on me for advice. On examination I found that his under jaw was almost immoveably fixed to the upper, by a firm, ligamentous adhesion, extending from the cuspidatus tooth on the left side, backwards to the coronoid process. There was no lateral motion, and but a slight motion downwards. His face was badly disfigured, the left cheek being much fallen in, and the mouth drawn towards one side. Being able to separate his front teeth a little, he had conveyed his drinks between them, and by using them in masticating small portions of solid food, had worn away the upper incisors so as to leave an opening of nearly a quarter of an inch.

He had been in this situation ten years; said it was occasioned by neglected mercurial ulceration of the cheek and gums. He also informed me that it had been cut five times by eminent surgeons—twice by the late justly celebrated Professor SMITH, who, by the use of a



A wooden wedge succeeded in separating his front teeth about half an inch, but that it irresistibly contracted as the wound closed. On the whole, the case too nearly resembles the one related by Professor MORT, in No. IX. p. 102 of this Journal, to need any further description. I proposed the same operation as there described, but the patient objected to having his cheek cut through. I therefore varied the operation so as to save the cheek entire, and am induced to believe that this is an improvement worthy of notice; for, independent of its saving at least some pain, it leaves the face free from scars, and there is no danger of the breaking of stitches and slipping of adhesive straps during the cure.

The patient being seated in a chair in a strong light, his lips separated and firmly held by assistants, I passed a very sharp two-edged knife, flatwise, in the direction of the teeth, back to the angle of the jaw, and carefully dissected the morbid adhesion from the gums; I then turned the edge so as to cut through the hardened mass crosswise, and as far back as I could. This so far loosened the jaw as to admit the *vice* betwixt the first molar teeth, and I then expected that a trifling force would be sufficient to finish the operation, but I have no doubt that the force applied was equal to one hundred pounds, and when it yielded it was attended with an audible crash resembling the laceration of ligaments. By keeping the jaws asunder by a wooden wedge, and the cheek from the gums by a soft sponge for a few weeks, the patient completely recovered the use of this jaw and the natural shape of his face.

Minot, Maine, June, 1831.

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ART. IV. *On the Adaptive Powers of the Eye.* By H. MORTON,  
M. D. of New York.

THE functions of the organ of vision have engaged the attention of anatomists and physiologists to a greater extent than any other organ in the animal economy. Its general anatomy is sufficiently well understood, but its physiology, we are inclined to believe, has not kept pace with the general advancement of medical science. Its functions as a dioptical instrument, or an organ of vision, offers a considerable field for observation and experiment, and a more accurate knowledge of these functions would perhaps enable us to explain more satisfactorily a great variety of its phenomena that are now obscure. Such knowledge might also enlighten us on its pathology, both



surgical and clinical, and as it is the organ through the medium of which the mind acquires by far the greatest proportion of its ideas, it might not be without its influence in a metaphysical point of view.

We find in the human species, as well as in most of the lower orders of animals, two organs of sight, but which, as regards the function of vision, should nevertheless be considered as *one single organ*; their analogous distribution of nerves and muscles, their perfect unison in motion depending upon this distribution, the necessity there seems to be that objects should be painted upon the same relative part of the retina of each eye, appears to indicate that nature has constituted them *one organ*. Whether this unity of function could be extended to the microscopic eyes of insects, our present knowledge of comparative anatomy will not permit us to decide.\* In the human subject, however, it is evident.

The general phenomena of vision is sufficiently well explained by the present known laws of optics. It is known that rays of light proceeding from objects or bodies, after passing through the different humours of the eye, and having undergone certain changes as regards their direction and colour, are received upon the retina or expansion of the optic nerve, and there form an image resembling the object from which they emanated; the image, however, is much smaller than the object, and inverted. These facts are sufficiently proved by the examination of the recent eye of an animal, and also by instruments constructed to resemble the human eye; but upon examination we will find that the eye, however recent it may be, has lost its adaptive powers,† and optical

\* Our own organ may be rendered microscopic by substituting for the natural pupil, (which cannot be brought to the requisite degree of minuteness,) an artificial opening. If a piece of card be perforated with an ordinary sized pin, and vision directed through it, distinct vision of minute objects may be obtained within half an inch of the cornea. We find nature has adopted the same mechanism in the formation of the eyes of the chameleon; it feeds upon minute insects, and its pupil is so small as to be scarcely visible to the naked eye. "La fente est d'ailleurs si petite qu'on voit à peine sa prunelle au travers."—*Cuvier, Anat. Comp. d'Œil.*

† The observation of M. Majendie upon the dead eye of an animal is equally true of the camera obscura; in fact, the recent eye is no more than a perfect camera obscura, and in both cases the distinctness of the image will be increased by adapting a pupil of the requisite diameter, and supposing the image on the retina of the recent eye is equally distinct when directed to near and distant objects, yet as we are ignorant of the precise degree of distinctness requisite for vision, no certain inference could be drawn from this fact. If the same thing occurs in the living eye that M. Majendie and others have observed

instruments we know must undergo certain adjustments for their proper adaptation. In both cases the focal distance of the lens must be changed, either by motion in itself, which is a theory advocated by many—or else its relative position as it regards the retina must be altered—or, which is equivalent, the retina or screen upon which the image of the object is received, must either approximate or be removed further from the lens, according as the object viewed is nearer or more remote, unless the organ or instrument be adapted for parallel rays. It is presumed that there is a mechanism by which the animal eye is thus enabled to adapt itself to points of vision at different distances; yet there are some ingenious men who can see no necessity for this power and would explain the function as the result of habit and attention. Notwithstanding, however, the subject has received a great deal of attention, and a great many truly ingenious and interesting experiments have been made, they seem to have tended rather to expose the errors of other theories than to establish the true one.

The eye is unquestionably the most complicated organ in the whole system, and therefore an explanation of its functions necessarily demands an intimate knowledge of all its complicated parts; not merely the general laws of optics applicable to it, but also its minute anatomical structure, as well as the physiological sympathies existing between its different parts. To consider the eye as a mere optical instrument, or even the most perfect “camera obscura,” which it certainly very closely resembles, would by no means lead us to an *accurate* knowledge of its general functions, and least of all the peculiar function we are now considering.

In comparing the eye to any optical instrument made to resemble it, we should conclude that the skill and power which formed the one, endowed it with properties which it would be absurd to expect to find in the other. Omniscient skill and Omnipotent power was exercised in forming the human eye and adapting its various parts to harmonize in action, while the optician’s instrument, how-

in the dead, that is, all objects, whether near or remote, are equally distinct in outline upon the retina, where will we find an explanation of the fact, that in vision near objects are actually more distinct than distant ones. It seems only to increase the difficulty, whereas, if we admit that near objects are rendered more distinct by a certain adaptation of the eye, (which can be proved even on the recent subject, by making use of a diaphragm having an opening of the requisite diameter,) we at once can account for the different distinctness of near and distant objects.

ever perfect it may be, is, after all that human ingenuity can suggest, but an imperfect imitation of its model.

Among the variety of opinions entertained respecting the adaptive powers of the eye, that appeared the most satisfactory at the time, which supposed an alteration in the spherical form of the eye produced by the action of the recti muscles, whose consentaneous action either lengthened or shortened its axis. The great and permanent convexity of the cornea in near-sighted persons seemed to favour this idea, and it was inferred that a palpable motion productive of this effect would be detected upon examining an eye while in the act of adapting itself to points of vision at different distances. Experiments were therefore made to establish this fact; the eye of an individual was observed through a microscope in such a manner that the slightest motion, if any, would be detected, but no motion adequate to the requisite effect could be observed. Neither could it be fairly inferred that the great convexity of cornea in near-sighted persons was the cause of their defect of vision, for in the ingenious experiment of Dr. Young, the eye, (although the influence of the cornea was destroyed,) still retained its adaptive powers. That a very great degree of convexity in the cornea would be attended with a certain defect, as it regards the adaptive power, is possible; such might be the case in congenital malformation; but it can scarcely be considered as the cause, when this defect is consequent or depending on constitutional derangement, too violent or long-continued action of the organ, or when the eye has been subjected to too intense a degree of light, or even in sudden transitions from one medium of light to another, when the eye, at least for a time, loses its adaptive powers. Cases analogous to those enumerated frequently come under the observation of medical men. A patient now under my care, until the age of thirteen, possessed the ordinary range of vision, but too close application to study together with confinement, brought on constitutional derangement, and upon convalescing this defect of vision was observed, and has continued for a number of years; at the present time occasional indisposition has an evident influence on the adaptive powers of the eye. Mr. ANNESLEY states that hemeralopia or night cecity, is especially prevalent among the people of India, and he considers it as owing to accumulations of morbid secretions in the primæ viæ, and is always remedied by free purgation.

From observing the fact that a double concave lens would remedy the defect in a near-sighted eye by counteracting, as it was supposed the too great convexity of the cornea, it would appear that the chief attention of experimenters had been diverted from the other struc-



tures of the eye, and led them to seek for the explanation of the power of adaption, in the alteration of convexity in the cornea alone. Now there are some instances where no undue convexity can be observed, and yet the eye has not the power of adapting itself to distant vision. We frequently find artists who are in the habit of using one eye only on minute objects, in process of time become near-sighted in the eye so used. If we observe attentively the eye of a near-sighted person, when directed to distant objects, and fix our attention upon the iris, we shall find, when a lens is placed before the eye, that the diameter of the pupil is gradually altered, the iris shortly becomes stationary, and until this change in the iris has been effected vision is not distinct; evidently proving that a certain change must take place in the eye, notwithstanding the aid of the artificial lens.

The influence of the iris in regulating the admission of light did not escape the observation of the earlier anatomists; it was observed invariably to expand in an intense, and contract in a less vivid light. If the eye be directed for a moment towards the sun, the pupil attains its least diameter. The reverse takes place in the entire absence of light—the pupil is enlarged to its greatest extent. Such a provision was necessary to guard the delicate organ from the effects of intense light, but experiment and observation would lead to the conclusion that the iris, besides possessing this instinctive power of self-preservation, influences directly the function of vision, that while it excludes from the eye too intense a light, at the same time it has the power of admitting only such rays as are necessary for distinct vision. We might consider the iris as acting under two kinds of sensibility, or perhaps mere modifications of the same sympathy—that sensibility which protects the retina from too much light, and that *visual* sensibility, (if we may be allowed the term,) which, when the iris has adapted itself to the intensity of light in the surrounding medium, adapts the pupil to the admission of only those rays which are requisite for distinct vision. To be assured of this we have only to observe the eye while performing its function of vision, when it is directed generally to a distant prospect; the iris is adapted to that degree of light consistent with its normal function, but the instant an object is singled out in the distant prospect, we can observe a sensible alteration in the diameter of the pupil, the result of a new impulse, and on closer observation the iris will be found to vacillate as the object singled out is more or less *distinctly* seen; or perhaps it would be more correct to say, the object becomes more or less distinct in accordance with the motion of the iris. The



motion of the iris when objects are viewed at different distances has been observed, but sufficient importance has not been attached to it. Under the influence of solar light, this visual sensibility of the iris is much less apparent than in its absence; its motion, however, is sufficiently evident even to the naked eye, but in a more obscure light it is palpably manifest.

A case is related by Mr. TRAVERS, in his work on the eye, of an individual who possessed directly a voluntary power of adapting the eye. We are inclined to believe that to a certain extent this power is possessed by most individuals; that is, objects at any point of vision may be rendered indistinct by what would appear to be a very slight exertion of the two internal recti muscles, and if the iris be observed at the same time, it will be found to vacillate, contracting or enlarging as the object becomes distinct, or the contrary. It is true, this motion in the iris, though observable, is not as extensive as when the eye is directed, by candle-light, in quick succession from distant to near objects, and might leave a doubt whether so slight a change in the diameter of the pupil would be adequate to produce the effect.\* A consideration of the form and action of the iris, together with the peculiar properties of the crystalline lens, will perhaps leave less reason to doubt the influence the iris possesses of regulating the visual rays proceeding from objects at different distances.

A great deal of minute investigation has been made for the purpose of deciding the question, whether the iris, properly speaking, can be considered a muscle. It appears to be a matter of no very great importance whether we rank it as a muscle or not, provided we can ascertain its structure and function: at any rate, we find it endowed with some of the properties peculiar to muscular fibre, and it is sufficient for our present purpose to consider it as such. It is certainly a tissue endowed with peculiar properties; its sympathies or sensibility is peculiar to itself. Anatomists describe it as a flat, circular muscle, perforated in the centre; this description would be strictly accurate only in autopsic examinations, but will not accord with its actual form in the living animal, especially during its state of dilatation, for then it may be considered rather a funnel-shaped muscle, resembling the surface of an extremely obtuse truncated cone, its top or apex being the pupillary margin, its base the edge inserted or arising from the circular margin of the choroid coat. In the living

\* I have, however, frequently been able, while observing the eye of an individual in this condition, to inform him when his vision was distinct or indistinct, by merely observing the changes in the diameter of the pupil.

subject, the pupillary margin is somewhat in advance or anterior to its base or origin, and corresponds in direction with the anterior convexity of the crystalline lens. This peculiar conformation gives to the iris a controul over the admission or exclusion of rays of light, as it regards the lens, which would not obtain were it either a flat muscle, or its points of origin and insertion reversed. This peculiar mechanism enables the iris in the most expeditious and effectual manner to exclude all collateral and unnecessary light, and at the same time admit such rays as come in direct lines from the object viewed, and confines them to the central portion of the crystalline lens. Had its base or insertion been anterior to its pupillary margin, it is evident that the diameter of the pupil could not have been adapted to receive the direct rays proceeding from objects, without at the same time admitting an undue and unnecessary quantity of light within the eye; had it been a perfectly flat muscle the same difficulty, though to a less extent, would necessarily follow. Its present form and action, is, like all the works of nature, a master-piece of mechanism, and calculated in the most perfect and admirable manner to produce the desired result.

The action of the iris, its contraction and dilatation, should perhaps be viewed as a motion "*sui generis*," for there appears to be no other muscle in the system precisely analogous to it. In considering muscular action, we are accustomed to connect the ideas of the origin, insertion, and fulcrum of each muscle, and from thence infer the intended result or effect produced by their contraction, but in the iris we find only its origin, unless we consider its pupillary margin as its insertion, but even then we want a fulcrum; in fact, its muscular motion is peculiar to itself; the tongue is the only muscle analogous to it in action, for after protruding the tongue beyond the teeth, as far as the motor muscles attached to its root and inferior surface will permit, we still have the power of elongating and of moving in different directions the end or tip to a considerable extent. This power is possessed in a much greater degree by many of the lower orders of animals—the cow, sheep, dog, &c.; the cow can thrust its tongue a considerable distance within the nostrils; it is, we conceive, an analogous species of muscularity by which the leech and common earth-worm are enabled to move.

Such being the admirable mechanism of the iris, we shall have less hesitation in admitting that a very slight alteration in the diameter of the pupil will be fully adequate, not only to regulate the proper quantity of light, but also controul the admission of the necessary visual rays. It may appear, however, more satisfactory after taking

into consideration the peculiar properties of the crystalline lens. It will be sufficient for that purpose to consider the lens of the human eye as a transparent substance, having its two surfaces composed of equal segments of the same sphere, and consequently will possess the common properties of the optician's instrument, denominated the double convex lens; its actual form, according to PETIT, is that of a compressed sphere having its anterior surface the segment of a greater sphere, its posterior the segment of a less. The changes, as it regards direction, that rays of light undergo in passing through a dense medium of this configuration, can be ascertained by experiments upon the artificial lens with a sufficient degree of accuracy to enable us to draw conclusions relative to the powers of the natural lens of the eye. The general properties of a double convex lens are, that rays of light which pass through it *furthest* from its centre or axis, are made to converge the soonest, and those rays which strike *nearest* to its centre or axis converge the least. All parallel rays in passing through the lens have the greatest focal distance, and it is this point, the focal distance of parallel rays, by which opticians designate the power of their different lenses, calculated either by the convexity of the sphere, of which they are a segment, or else from actual measurement, by receiving the rays of light from the sun, which rays may be considered as parallel, owing to its distance.

According to the known laws of optics, rays of light proceeding from objects at different distances, after passing through a double convex lens, are brought to different foci, the rays of light from the more distant objects being parallel, have necessarily the longest foci; the same object, if brought nearer the eye, and seen in its full magnitude, must be seen by converging rays, the focal distance of which, according to the laws of optics, would be less than when the object was more remote, and consequently in one or the other instance vision would be defective—if distinct in the remote, it would be indistinct when the object was brought near, or the reverse. Such would be the case in an eye wanting an iris; such we find is the case in optical instruments, the "*camera obscura*," &c.; the defect in either can be remedied by the same or nearly similar means. The iris being capable of contraction or dilatation, accommodates the pupil to the admission of only a certain number of the more parallel or direct rays whose focal distance is uniform, and at the same time excludes all indirect or collateral light, which, if admitted, would only tend to render the image indistinct. In the camera obscura the same effect may be produced by substituting for the iris artificial diaphragms; in the instrument now before me, though imperfect in its



construction, the screen upon which the images are formed, may be moved considerably beyond the focal distance of the lens, so that no objects whatever appear upon it, and by interposing an artificial pupil of a certain diameter, objects become apparent. It would appear that the interposition of the iris, while it excludes a portion of the indirect rays, confines those that are admitted to the central part of the lens, where they consequently undergo less refraction than if they were suffered to be acted upon by parts further from its centre or axis, and consequently have their focal distance increased. The opinion entertained by Mr. Travers on the adaptive power of the eye, was based upon the supposition of a change of figure in the crystalline lens. He supposed it an elastic body, influenced by the muscular action of its surrounding parts, and that both its figure and site were changed, whereby its refractive powers were increased or diminished. Now, the influence of the iris renders such a supposition unnecessary, because the diameter of the pupil alone will controul or alter the refractive power of the lens, as it regards certain rays, by admitting the rays of light to be acted upon by different parts of the lens possessing at all times different powers of refraction.

The field of *distinct vision* is extremely limited, scarcely perhaps the twelfth of an inch as it regards the retina; if we observe a person while reading, we see the axis of the eyes successively moving from point to point, and can observe, even in our own case, that if we attempt to view distinctly two points, distant from one another the eighth of an inch, we feel sensible of an evident exertion in the muscles of the eye to direct its axis from the one point to the other. In viewing a distant prospect the eye possesses a much greater range, but is also much less distinct, and individual objects in this prospect can only be rendered more distinct by directing the eye to a limited and circumscribed point, and the rays of light emanating from that point must necessarily pass through the more central portions of the crystalline lens.

The perfect structure of the crystalline lens, together with its surrounding mechanism, give to it additional powers; it is composed of concentric lamina differing in density, (and consequently in the powers of refraction,) from the centre to the surface; it is contained within a transparent capsule, between which and the lens is a peculiar fluid, denominated the liquor MORGAGNI. From its anatomical structure an optician would infer that it was the most perfect instrument of its kind, and the immense extent of vision, from a few inches to millions of miles, would confirm the opinion. Artificial lenses are subject to certain errors, denominated by opticians the caustic curve,



by refraction or spherical aberration; from the established laws of matter, the crystalline lens would be subject to the same error to a certain extent; this defect is counteracted in a measure by its structure, but chiefly by the interposition of the iris; the structure of the lens, aided perhaps by the other humours of the eye, the aqueous, vitreous, &c. render the organ perfectly achromatic. To avoid these various defects, opticians have endeavoured to imitate nature by combining two plano-convex lenses, and interposing a diaphragm between the two plane surfaces; in this, however, they have imitated nature imperfectly, for in the one it is fixed and immoveable, while in the other it is not only possessed of motion, but a motion in every respect subservient to the function of distinct vision, as well as the preservation of the organ. In adapting the spyglass for the view of distant objects, it becomes necessary that the lenses made use of should be brought to their respective focal distances, which is effected by elongating the tube; at the same time this produces an analogous effect to that of introducing a perforated diaphragm, for as the tube is elongated, and the lens removed from the object part of the instrument, the *virtual* diameter of the orifice is diminished, or the range of vision lessened, because those rays of light which would have struck the lens, if near the object orifice, when it is removed further from it do not even reach it, and if placed sufficiently remote, will effectually exclude all but the more direct and parallel rays, which we think are those chiefly concerned in *distinct* vision.

As it regards the defect of vision in near-sighted eyes, as well as that change which is found to take place in old age, it would appear that too much importance has been attached to the influence of the cornea, and accounted for by the action of the recti muscles, and in old age by the absorption or diminution of the different humours. I have frequently examined the corneas of near-sighted persons, where not the slightest degree of undue convexity could be detected; and on the other hand, I have seen many who had unusually convex corneas, and yet did not labour under the defect usually attributed to this peculiar conformation. I have recently had this observation confirmed in the instance of an individual under my care, whose cornea was so extremely convex, that when the eyelids were closed, it formed a protrusion elevating the lid several lines above the sclerotic surface, and evident at a considerable distance when the eye was closed and made to roll in its socket; the adaptive powers of the eye were nevertheless unusually perfect. There are, no doubt, many instances where this defect of vision is accompanied with a great convexity of cornea, but it does not necessarily follow that it should be the cause of it.

This great convexity of cornea, which in the human species is considered a defect, is found to exist in many animals that seek their prey by night. All the animals of the species "*Felis*" are remarkable for their acuteness of vision; "the eye of the lynx" has become proverbial; like the domestic cat, their corneas being the segment of a smaller sphere, may perhaps be considered much more convex than that of the human eye, but the perfection of their organ would seem to result from the expansive and contractile power of the iris. The immense play of the iris in the domestic cat, and the acute sensibility of the retina to light, is truly astonishing; now the owl does not possess an equal play of the iris, and we find in the broad glare of daylight they see but dimly if they see at all. There is no doubt but the pliancy or mobility of the iris may be increased by practice; we find that artizans constantly engaged in minute work, provided they do not use an artificial lens have the microscopic powers of the eye greatly increased; but the constant and long-continued action of the iris deprives it of the power of requisite contraction for distant vision; and again, sailors who are much accustomed to discern distant objects, and use their eyes a great deal by night, have their respective powers much more developed and perfect.

The pathology of the organ of vision affords a great number of facts which would seem to strengthen the opinion as it regards the influence of the iris in the proper adaptation of the eye. In the fifth vol. of the *Medico-Chirurgical Review* a case is related of total, though temporary blindness, attended with excessive enlargement of the pupil, and we know that sudden fear produces a similar effect upon the iris, and attended with the same defect of vision. In most cases of "iritis," indistinctness, followed by total loss of vision, commences with the irregular contractions of its muscular fibre; and after the operation for artificial pupil, when the iris has lost its powers of contraction and dilatation, the eye also loses its adaptive power, and requires the aid of artificial lenses. If the irregular contractions of the iris render vision indistinct, it would be important in the operation for artificial pupil, to take into consideration not only the requisite or most convenient diameter of the pupil, but also its form and situation; for Mr. GUTHRIE in his work on artificial pupil, remarks, that the more the rays of light are directed to the central portion of the lens, the powers of vision are much more augmented than when the artificial pupil is made so large that rays are admitted upon its circular margin. Indeed opticians are generally agreed that only the central portion of their lenses are of use, and by the adoption of diaphragms, they render useless, as it regards the transmission of light,

any other portion. The central portion may be all that is necessary in optical instruments, as they are generally used to view single objects, or at any rate their field of vision is extremely limited, and only make use of the more parallel and direct rays. But the mechanism of the human eye gives it additional powers. Our bountiful Creator, in giving to the eye of man its powers of adaptation, enables him to survey at one glance immense portions of the universe, and under the controul of his will, by the same power can examine in detail each single object; in like manner the camera obscura possesses a great range of vision, but it possesses not the power like the eye to single out individual objects and render them more distinct. Neither the anatomy nor the physiology of the organ of sight will support the hypothesis which presumes the adaptive power to be the effect of the action of the recti muscles; in fact, this muscular apparatus connected with the eye, is designed for a motion of a different nature than that of changing the spherical form of the ball itself; it is for the preservation of the organ itself, and for the purpose of directing, under the controul of the will, the axis of the organ to the object viewed. To support the hypothesis of the four recti muscles, we must presume that they act in unison, that they all contract or relax at the same moment; this presumption, has however, never been proved by observation or experiment; but supposing they did, it would only produce the required change in the figure of the eye, when its axis was directed in a horizontal direction, directly forward; for the instant the axes of the eyes assume an oblique direction, one of the four muscles must be in a state of relaxation. But if we closely examine the motions of the eye, we will be satisfied that all the muscles do not contract simultaneously, but follow the general law of muscular action throughout the system; that is, when one muscle contracts its antagonist relaxes. It is true we have the power of contracting the two internal recti at the same time, and direct the pupil inwards towards the nose; but we have no similar power over the two external recti, and thereby to direct the axes of both eyes outwards at the same time; and it may be explained upon the difference of nervous distribution—nerves of voluntary motion being distributed to one pair of muscles, and nerves of involuntary to the other; this subject, however, has become one of so much interest, since the elucidation of the nervous system by Mr. BELL, that it should not be even referred to in so cursory a manner. If the influence of the iris is as important as it really appears to be, it will explain those changes which are observed to take place in more advanced life. As we descend in



the vale of years, all the muscles, articulations, tissues, &c. become more rigid and less pliant than in youth, and there seems no reason why the muscular fibre of the iris should be an exception to this general law of nature. When the iris by age loses its activity and pliability, and no longer acts in unison with the visual sensibility of the retina, the eye is in that condition which frequently follows certain constitutional derangements, iritis, or when the operation for artificial pupil has been undergone.

Our limited knowledge of the operation of mind upon matter will not enable us to decide whether the motions of the iris are or are not wholly independent of the will, and the difficulty is still further increased by the complicated nervous distribution to the organ; there is no organ in the system to which so many different nerves are sent, and all designed for distinct functions. It receives nerves of voluntary motion from the third pair, or *motores oculorum*, a nerve of involuntary motion from the fourth or *trochleus*, branches from the fifth or ophthalmic of Willis, which is a nerve of ordinary sensation, and this last branch is joined by a nerve from the great sympathetic. In addition to these, the extreme branches of the optic nerve are freely distributed on its internal surface. To explain the sympathies consequent to this extensive nervous distribution, if it could be done, would afford matter for a distinct treatise.

If the views we have taken of the properties of the lens and the influence of the iris be correct, the mechanism by which the eye adapts itself may be better understood. The iris, by its contraction or dilatation, admits the requisite number of visual rays to pass through that portion of the crystalline lens which will cause them to reach the retina at their proper foci, while at the same time it excludes in the most effectual manner all unnecessary light, and all collateral or indirect rays. With this view of the subject, many of the anomalies of vision can be much more satisfactorily explained. The singular defect of vision which occurs occasionally to Mr. ABERNETHY, the talented professor of St. Bartholemew's Hospital, is of that description which we are rather inclined to believe should be attributed directly to the irregular contractions of the iris, though induced, it is highly probable, by a certain morbid condition of the retina. On certain occasions he can only see one-half of any object viewed; on observing himself in a mirror, but half of his face is distinctly visible; looking at his name upon the door-plate only a part of the letters are distinctly seen. A similar effect can be produced in the instrument now before me, (constructed as nearly as possible to



resemble the human eye,) by bringing the opening in the artificial iris either above or below the central portion of the lens, whereby certain of the direct rays coming from the object are intercepted, and consequently only a part of the image will be distinctly painted upon the screen. The cases which Mr. Abernethy alludes to, and considers analogous to his own, are purely the result of a morbid condition of the nervous system, and cannot be explained upon the known laws of optics. The instances he quotes are those where individuals see, or rather think they see, objects that are invisible to persons around them. Such cases are by no means uncommon, and in the complaint denominated "delirium tremens" are almost a constant symptom. The case related by Mr. A. was that of a gentleman, who, while reading in his study, on turning his head, observed, as he thought, a woman in a red cloak seated in a chair near him. So complete was the illusion, that he addressed her and inquired how she came there; receiving no answer, he ordered her out of his presence, and expostulated with her for not obeying him. At length he rose from his seat, rang for his servant and ordered him to turn her out. The servant assured him that there was no woman or red cloak in his presence; he then sent for his physician, very naturally concluding that his nervous system was deranged.

Now it cannot be presumed that in this instance there were rays of light reflected from a woman in a red cloak and impinging upon the retina of his eye; but it is equally certain that at some former period all this had taken place, and that the gentleman had actually seen just such an accoutred woman, whose image upon the retina had produced a certain impression upon the sense of vision, and at the time the mind may have taken cognizance of it. At any rate, the image once upon the retina left a certain impression, which the organs constituting the sense of vision had the power to exercise and with the same degree of vividness as it had once appeared; not by a voluntary effort of the mind, because it appeared whether he would or not. He might say with Macbeth, "Avaunt and quit my sight, unreal mockery hence!" but there it remained "like the air-drawn dagger, in form as palpable as that which once he saw." In fact, we are hourly convinced that the *mind* has as limited a power of recalling *sensations* as it has in exciting or controlling the functions of the involuntary nerves. It would seem that, that portion of the brain which gives origin to the nerves of *sense*, performs its function to a *certain extent*, independent of the cerebrum, or that portion of the encephalic apparatus which is at present considered the organ or

*medium* for the exercise of intellect or volition; and the mind, however it may recal its own emotions, the result of sensation, has but a limited power over the *sensation* itself.

Let the mind endeavour to picture to itself the person or portrait of an intimate and absent friend, and after the greatest exertion how faint and indistinct the picture will be when compared to that portrait which we must believe the *senses* conjure up during the partial repose of the intellect. When dreams disturb the curtailed sleep, how vivid are all the sensations, and yet in what unnatural and absurd combinations do they come before the dozing mind.

“Strange dreams, that give a dead man leave to think.”

Are not these rather the offspring of the senses than involuntary aberrations of the mind? Are not the sensations of the maniac, and the perceptions arising from them, as real and substantial as though they originated from present sensations? and yet we know that the real *material* object, the sound, the smell, and the touch, that once imprinted them on the organs of sense, is not at the moment present.\*

Such hallucinations, however, as those recorded by Mr. Abernethy, and others of daily occurrence, should be considered as functional derangements of the whole nervous system, and are to be accounted for or explained by the physiologist and metaphysician, while the defect in his own case is directly owing to an arrangement in the mechanism of the eye, and admits of explanation upon the known laws of optics. For in his own case there were rays of light reflected from a material body and impinging upon the retina of his eye, and we are inclined to believe that upon close examination it would be found that the irregular contractions of the iris brought the pupil in that position as it regards the lens, that the rays of light did not strike equally upon its central portion. The consequence would be that half or a portion of the rays would be intercepted, some of those admitted would be unduly refracted, the remainder would be brought to their proper foci, and that portion of the image would be distinct, the other indistinct or perhaps invisible, according to the extent of the derangement in the action of the iris.

*New York, August, 1831.*

\* Be this as it may, our present knowledge of mind as connected with matter, is by far too limited to lead to any certain conclusions.

No. XVll.—Nov. 1831.

ART. V. *Cases of Cutaneous Diseases, with Pathological and Practical Remarks.* By Dr. MILO L. NORTH, of Hartford, Conn.

CASE I.—In the summer of 1818, a child about five years old was affected with a scaly eruption, accompanied with a discharge of limpid and puriform fluid, with heat and soreness, and occupying the neck and upper part of the thorax and shoulders. There were some appearances of disordered first passages.

A mixture of one part of pulverized rhubarb and two of carbonate of magnesia, rubbed in treacle, taken morning and evening, sufficient to procure two or three evacuations daily, in the course of three weeks caused the eruption to disappear, and the skin to become smooth. No external application was used except unguentum sambuci.

CASE II.—Two children of the Rev. C. C. of Vermont, both under five years, were submitted to my treatment in the same season, 1818, for a papular eruption covering nearly the whole surface of the oldest, and entirely that of the youngest. The heat and itching were extremely troublesome, particularly during the night. Several plans of ineffectual treatment had previously been prosecuted under the direction of the physicians in his vicinity. Ten drops of the following liquid were administered three times daily, in an ounce of sweetened water, for several weeks:—R. Acid. muriatici, ℥j.; Alcohol, ℥j.; Misce. The following ointment was applied to the skin morning and evening:—R. Adipis suillæ, ℔j.; Acid. nitrici, ℥j; Misce. Their complaints, after a primary aggravation of several days, which I had not then learnt was common in the convalescence of cutaneous diseases, began to yield, and within a few weeks entirely disappeared. The father afterwards wrote me that he had prescribed the same course to the children of several of his neighbours with the same happy result.

CASE III.—Mr. S. B. aged sixty, of good general health, accustomed to all the indulgencies pertaining to the pantry and cellar of a wealthy New England farmer, was affected, in the autumn of 1819, with heat, itching, and redness upon the leg, succeeded by scales, and a secretion of acrid, limpid fluid. These symptoms were most troublesome at night while the patient was in bed. From December 15th to January 15th, 1820, as he was of full habit, and had a strong pulse, he was bled twice, took various cathartics and antimonials,



and had the solutions of acetate of lead and muriate of ammonia applied to the affected limb. From the whole course of these remedies, occupying a month, I could not perceive the least benefit. I had urged him repeatedly to curtail his generous diet, but he conformed very poorly to my request. It became, therefore, necessary for me either to discontinue my visits to him, or to persuade him to comply strictly with the proposed course of regimen. Although I was not then so fully convinced as at present, that in the fluctuations of external and internal disease, that of the skin might so utterly absorb the whole morbid action as to leave the digestive organs free from *apparent* disorder, yet I gave him all the assurance I dared, that if he would enter upon the prescribed course of diet, he might hope very soon to be freed from his trouble.

In reply, he laid it down as a principle, warranted by plain common sense, that while his taste was natural, his tongue clean, his stomach free from oppression, flatulence, acidity, and all uneasiness, his appetite *strong*, and his bowels in a natural state, he was unable to perceive any use in the proposed course of self-denial. To gratify my wishes, however, he would consent for a season to its adoption. He then restricted himself to such a course of aliment substantially as is accordant with our most approved authors of the present day on that subject, including an entire omission of cider and fermented liquors, and, without any modification of the medicinal course, he was quite well within two weeks.

*Remarks.*—The above case disclosed to me experimentally two facts worthy of observation and remembrance, viz. the comparative importance of the hygienic and therapeutic measures employed, and the mode in which morbid action of the cutis may so absorb the internal disorder of the digestive organs as to allow them to carry on their functions without any manifest disturbance. In the younger members of our profession, it needs both firmness of nerve, and decision of opinion, to persevere in a course of diet and medicine when the patient thinks it unnecessary, and in violation of plain common sense.

CASE IV.—*January 22d, 1823.* Capt. H. B. aged eighty-six years, had for thirty years been troubled with ulcers upon the legs, accompanied with a cutaneous eruption gradually increasing to this time. For ten or fifteen years past he had been unable to labour, since which, his disorder had increased more rapidly. Both legs were now enormously swelled, hard, livid, hot, itching intolerably, covered



with *scales* from the toes to above the knees, exposing a red, leathery surface wherever they fell off, and aggravated by an acrid, watery secretion. He was of very full habit, face red, neck fleshy, pulse hard, and tongue somewhat furred. His legs were so hot and painful that he had but little rest till the latter part of the night, when the febrile disturbances kept up in the gastro-intestinal organs subsiding, he was able to sleep till nine or ten in the morning. He had taken brandy sling, temperately, three times a day for twenty years at least, and had doubtless taken spirits more or less ever since the revolutionary war, in which he was an officer. He had always eaten meat two or three times a day with such accompaniments as we are accustomed to see on the tables of our substantial farmers. For some time past he had had a diarrhœa, for which an opium pill had been taken every evening. He had followed no course of internal remedies that had proved effectual. Acetate of lead with laudanum, muriate of ammonia, and various kinds of poultices, had been among the topical applications employed.

After a long time spent in arguments and explanations on my part, and much hesitation on the part of the patient, whether to comply with the terms which I proposed, *in limine*, as a *sine qua non*, or to send me home without prescribing, I succeeded in engaging him entirely to suspend the brandy, cider, and opium, and to confine himself exclusively to rice, crackers, milk-toast, gruel, bread and milk, and other articles of a similar kind. Gingerbread, plain puddings, and codfish, were occasionally allowed. He took, every second day, an active cathartic of sulphate of magnesia in infusion of senna, and on the intervening days, pulv. rhei and magnesia combined as a laxation. His drink was a saturated solution of super-tartrate of potass, with as much of the tartrate of antimony in the same as the stomach would bear without disturbance. Flour was the only application made to the limbs.

Although I had taken the precaution to acquaint him that the first effect of the course would apparently aggravate his sufferings, yet I was not prepared to expect the reproachful look and language I received from my veteran patient as I entered his apartment four days afterwards. As he had never passed the bounds of respectable sobriety, he thought it cruel and unreasonable that the faculty could not cure his sore legs! without depriving him of the good things which Providence had put into his hands. He persevered, however, and within two weeks from my first visit, there was an amelioration of all his symptoms. The diarrhœa disappeared, the swelling, heat,

itching, and redness of the limbs diminished, his breathing became less stertorous, and his sleep improved. The watery humour had changed into a thick, purulent secretion. After this change was effected in the morbid secretion, the following was applied morning and evening in conjunction with the above-prescribed course of medicines and regimen:—R. *Acidi nitrici*, ℥j.; *Adipis suillæ*, ℥j.; *Misce*. The nurse told me she frequently removed a saucerful of scales at a dressing.

*February 17th.*—The legs soft, and healing rapidly. All the symptoms improved. Continued same treatment.

*March 22d.*—Took my leave of the patient. Legs soft. Eruption gone. Sleeps well. Is able to labour. Adheres to the prescribed regimen.

*February 25th, 1824.*—Capt. B.'s legs are entirely free from any eruption or ulcer. His health and activity constantly increasing. Adheres to the temperance plan.

*August 15th, 1831.*—The above patient, now ninety-four years of age, is still living, and I presume very well, as I have heard of no illness that has occurred to him.

*Remarks.*—This extensive eruption and swelling of the limbs probably prolonged the patient's life, by diverting diseased action from the digestive apparatus and brain, and fixing it upon the skin and cellular tissue. While labouring in the field, the abundance of perspiration, and the salutary employment of the muscular energy, preserved such a balance between the income and expenditure of the system, as to preserve a tolerable share of health. But on becoming more infirm, and gradually relinquishing labour, while the reciprocal effects of alcoholic stimuli and high-seasoned food caused him to take an equal amount of nutriment, the balance of healthy action was destroyed, and a constant gastro-intestinal disturbance produced.

At what point, then, did diseased action commence in this case? I answer—in the digestive apparatus. The long-continued practice of stimulation and excessive repletion, had established a *morbid* appetite, requiring such an amount of ingesta to satisfy its cravings as to transcend the digestive powers, and thus, to the diseased appetite, was added constant irritation of those passages. Here the disease commenced—a purely factitious disease—produced by the “refreshments” of the distiller, and the boasted blessings of a generous table and a good cook. Had this individual shared with the Hindoos in their daily allowance of boiled rice, his case never would have reached the ears of the faculty.

He had originally, and has now, an iron constitution. As proof of this, it is interesting to trace the various efforts it manifested to withstand the noxious effects of his regimen. An ulcer upon each leg first availed as an outlet—a wastegate for the disease of the first passages. These becoming inadequate, the skin in the neighbourhood coöperated in sharing the latent disturbance within. This combined affection of the skin and cellular tissue, served for many years as a vicarious disease. In the mean time the system had become se plethoric, and the adipose substance so abundant, that he was thought by his friends to be on the borders of an apoplexy.

Hence, although there were no positive proofs that the brain was *diseased*, yet we need have no hesitation in saying, that the danger of a sudden failure in that organ was greatly diminished by the cutaneous affection, and, therefore, that this last affection held a pathological relation to the brain, as well as to the gastro-intestinal organs. The large intestines were at length enlisted in behalf of the individual, by a copious, watery secretion, in form of a diarrhoea. This, had it not been thwarted by the opium pills, would doubtless have diminished the plethora, and alleviated the febrile disturbances constantly propagated from the gastric organs. As it was, the diseased process was rapidly increasing in the lower extremities, manifested by the swelling extending above the knees, and by an aggravation of all the symptoms above-described.

From the history of the above case, and the result of its treatment, are we not warranted in the conclusion, that the disease commenced in the gastric organs; that it existed there in a latent state; that, in consequence, the brain became predisposed to disease; that the chronic affection of the lower extremities was sympathetic of the original disorder, vicarious in its nature, and tending to diminish the danger of the more central organs? The writer is fully aware that these suggestions do not put on the air of novelty to those who are acquainted with the pathological doctrines of this enlightened period. But as truth is the only object of his inquiry, and as the above case and its results are substantially similar to many that have occurred to him, and which might be adduced, he deems it matter of gratulation, rather than of apology, that a line of practice which has been, almost without exception, successful, should be found conformable to pathological opinions already established.

I have hitherto confined my remarks mostly to the connexion between diseases of the skin and those of the stomach and associate organs. That there is an intimate connexion between the *ascertaining*



functions of the skin and the lungs, kidneys and bladder, there can be no doubt. But my own observation has not furnished any striking instances of association in the *diseases* of the skin and these organs.

In the various instances of recession and reëpearance of eruptions which have fallen under my notice, I do not recollect an instance in which the kidneys, spleen, or bladder, have appeared to be the seat of the disease which had been thrown vicariously upon the dermoid system.

Disease, in its various metastases, occasionally passes from the brain, heart, or uterus, to the cutis, and vice versa. The liability to such alternations should be kept in mind, both in reasoning upon cutaneous affections, and in their treatment. Yet the pathological connexion of these organs with the skin is manifested so rarely in actual practice, as to render it unnecessary to trespass further on the patience of the reader in its consideration.

*That non-contagious cutaneous diseases, in this climate, generally originate from, and are connected with, a previous morbid state of the stomach, small intestines, liver, and pancreas, may be further established by the following considerations.*

1st. From analogy. Gout, erratic rheumatism, itching at the nose from worms, ophthalmia, amaurosis, sore throat, hysteric paroxysms, convulsions, and numerous other irritative diseases, are generally admitted to arise from sympathetic connexion with these organs.

2d. From the consideration that the mucous membrane in the immediate neighbourhood of these organs, and lining them, is the intervening barrier between the general system and all noxious substances swallowed, and is destined to receive their first effects. In animals provided with instinct, directing them what to choose and reject, this membrane may pass for years without disease. But in omnivorous man, this delicate organ is brought in daily contact with articles injurious to its texture and functions; such as tea and coffee at a temperature wholly insupportable to the skin, distilled liquors that cannot be held in the mouth five minutes without sensible pain, acrid and corrosive condiments, rich gravies, pastry, sweetmeats, and in short all the mischievous inventions that the art of modern cookery has congregated from the animal, vegetable, and mineral kingdoms. Nor is the *quality* of these agents all. They are rendered so delicious to the palate, that, in this land of abundance, they are taken in at least double the necessary quantity; and the physician who undertakes to combat American diseases, and overlooks these multiplied causes of gastro-intestinal disturbance, has yet to learn one of his elementary lessons. I have seen a copious crop of



fiery, itching pimples follow within a few hours a free indulgence in pickles, hard peaches, almonds, nuts, fresh pork, or minced pie. I have seen these disturbances as speedily subside by taking one or two compound rhubarb pills, or other bitter stomachic. As all persons are not predisposed to diseases of the skin, other sympathetic effects may be manifested from these noxious impressions; but those who labour under this predisposition, and are willing to observe the effects of particular articles of diet, can perceive an immediate aggravation of their eruption after indulging in the forbidden diet. These effects are often so speedy as to demonstrate that the gastro-intestinal membrane must be the part that suffers: for it must seem impossible that the first operation of an emetic, which removes the internal agent and external disturbance together, can eliminate any foreign principles that may have found their way into the blood.

3d. The proposition is supported by post mortem examinations. The number and variety of lesions in the gastro-intestinal mucous membrane that have been recently reported in our medical journals, show unequivocally that these lesions have heretofore been overlooked. These instances of ulceration, erosion, thickening, and inflammation, are precisely what we should expect from the structure and functions of this membrane. Dr. Gregory remarks that "the pain which accompanies inflammation of the mucous membrane is slight in comparison to that of inflammation of the serous membrane. The intestinal tract is remarkably prone to run into ulcerative action, and the rapidity of this action is worthy of note." *Practice*, I. 276. "Pustulous inflammation in the follicles of the mucous membrane is a disease which readily assumes a chronic character and often terminates in ulceration of the affected cryptæ." *Bayle and Hollard's General Anatomy*. "Without attempting to judge of their reciprocal influence, it is evident that cutaneous diseases often coincide with inflammation of the internal organs." *Biett's Lectures*. "At times diseases of the lungs or alimentary canal are met with, (in dissecting fatal cases of erysipelas,) whose existence had never been suspected." *Ibid.* "Ulcers are very rare on the inner membrane of the trachea and urethra, but very common on the inner membrane of the large and small intestines." *Baillie's Morbid Anatomy*.

4th. The similarity of structure between the skin and gastro-intestinal membrane, strongly marks the connexion between the diseases of those surfaces. Indeed, these organs are considered in structure nearly identical by anatomists, from BICHAT downward, differing only in the absence of the inner cuticle; and even this is supplied by a different substance lining those parts of the intestinal tract

where the epidermis cannot be distinctly separated. The alterations of disease from the external to the internal tegumentary membrane, and vice versa, are like the wanderings of erysipelas, erythema, or herpes from one part of the skin to another. The blotches of the rum-drinker's face are the mere effects of continuous inflammation, and are the index of the scorched and reddened state of the inner surface, which has endured the burning stimulus of gallons and barrels of diluted alcohol. But these considerations are too obvious to detain the reader longer on this head.

5th. Another proof that the gastric organs are the primary seat of disease in cutaneous affections, is drawn from the fact, that in most instances these organs manifest immediate signs of disease in cases of sudden recession of eruption from the skin. This is more especially noticeable in the minor eruptions, such as erythema, roseola, lepra, psoriasis, &c. Every physician knows that patients are uniformly worse in their general health when their disorders have "struck in." Salt rheum and erysipelas, the former of which in common language answers both to lepra and psoriasis of BIERR, and the latter to erythema, meet us at every corner. In all cases where the patient's disorder is not of a grave character, there has been a uniform connexion between the gastric organs and skin in these alternations, as evidenced by nausea, faintness, fluttering, pain in the side, stricture about the epigastrium, &c. It is a common occurrence to observe sore ears and other eruptions in children cured by a spontaneous diarrhoea. There is no doubt, however, that the brain and lungs do occasionally receive the burden of a receding eruption.

And here I beg to be distinctly understood, that in establishing the connexion between the non-contagious eruptions and the gastric organs, and the fact that these organs are diseased antecedently to the skin, I do not pretend to explore the ultimate origin of disease. The diseases of both these localities may be, and probably are, the *effects* of an ulterior but obscure cause, influencing the whole habit of body. We say of a fatal erysipelas it has "struck to the brain." But who does not know that the inflammation of the external teguments in erysipelas is nothing in comparison with that which is produced by burns, scalds, &c. and which is attended by no danger? How plain it is that the cutaneous inflammation in the febrile form is the mere index to the deadly disorder within. The popular pathological opinions of the day would refer the ultimate cause of failure to the brain and nervous system. This may be the true explanation: but we are to keep in mind that the lesions already alluded to, which late dis-

sections have detected, are more unequivocal in the lungs and first passages than in the brain.

In cases of the recession of long-continued cutaneous disease being followed by death, "it is not improbable that some fatal mischief arising from some ulterior cause had so weakened the powers of life, that nature was unable to free herself longer from that encumbrance she used to throw off upon the skin."—*Heberden*.

6th. The last consideration I shall adduce is derived from the means employed in the cure of cutaneous diseases. Cathartics, tincture of cantharides, and the arsenical solution skilfully managed, and accompanied with a strict attention to diet will lead to very satisfactory success in the treatment of these complaints. It has been my own plan to commence at once with cathartics, much in the manner recommended by Dr. HAMILTON. Calomel, calomel and jalap, senna and sulphate of magnesia, have been favourite articles, and given every second day to produce free catharsis. In the intervening days a laxative of powdered rhubarb and magnesia. This course should be continued, if necessary, at least four weeks.

As to diet, no absolute rules can be given, but I have seldom known such a patient bear fresh pork, sausages, rich gravies, pastry, nuts, pickles, raw vegetables, stuffings, acrid condiments, or any farinaceous substances recently cooked. Cider and all fermented liquors and fresh pork I have found particularly injurious. I have noticed that melted butter and fat are more indigestible than the same articles in a solid state; and this is accounted for on the principle, that when masticated with bread and other articles, they render these substances impervious to the saliva. Even in a solid state they are to be used very sparingly if at all.

Local applications are always thought necessary by the patient, and are of use, though in a very subordinate degree compared with internal remedies. I have found nothing equal to nitric acid and lard, in the proportion of one ounce to the pound. If the diseased surface is quite hot and inflamed, the ointment should be weakened by the addition of an equal quantity of lard, and even this should be delayed till the surface indicates some improvement from the internal remedies. I formerly used to raise the lard to a high heat, and gradually add the acid, which was thus decomposed, and an oxygenated ointment formed. This has appeared to me more efficacious than the same composition formed without heat. This should be applied every evening, and followed in the morning by a tepid alkaline wash, consisting of ℥ij. of the sub-carbonate of potash or soda, to one pound of



water. When the eruption is general, an occasional warm bath in the evening, containing from four to eight ounces of one of the above articles, would be desirable.

Should the skin not become decidedly improved in four weeks, the cathartics should be suspended. The daily administration of an aperient, of rhubarb and magnesia, with a blue pill, every evening, will often effect a cure if continued several weeks, and if the patient can be brought to a rigid obedience of the rules of regimen.

If these measures fail, let five drops of the tincture of cantharides be given every morning for six days, when it will be proper to increase the dose, one drop daily, till heat at the epigastrium, or symptoms of strangury, show that it has arrived at the maximum dose. The medicine can then be continued in a somewhat less quantity for four or six weeks from commencing its use. By this very moderate medication, the patient is acquiring more restraint over his morbid appetite by his lengthened discipline: an acquisition of great moment to an individual possessed of a predisposition to cutaneous affections.

Should the cantharides fail, continuing all other means, it would be necessary to commence the use of Fowler's arsenical solution, in the dose of three drops every morning, eating a light breakfast, and gradually increasing it to twenty drops. In the dose of twenty drops twice a-day, I have known it produce surprising effects in the rapid disappearance of an extensive cutaneous and subcutaneous affection of the back. The mucous membrane of the stomach was, however, so much irritated by these powerful doses, that a severe ophthalmia was sure to be produced if the medicine was continued over ten days at once.

If, by thorough explanations and arguments, the patient can be brought to a compliance with the prescribed diet, and made to feel that thence forward he is to use great caution in the indulgence of appetite, the most difficult point is gained. This difficulty is the grand reason why we meet with so many incurable cases. It will be seldom in our climate, that, with this point gained, one of the above courses, and generally that of cathartics, will fail to restore the patient to health.

The inquiry arises, and it shall be despatched very shortly, how does the mode of treatment illustrate the connection between the diseases of the gastric organs and the skin? No language can form a more appropriate answer than the following, applied by Dr. Goon to a singular and very obstinate case of lichen: "The patient was at length fortunate enough to be put upon a brisk course of calomel, of



which he took five grains every night, with a purge of rhubarb or cathartic extract next morning, for nearly a fortnight in succession; and, having thus transferred the morbid irritability of the skin to the intestinal canal, the disorder left him."—*Study of Medicine*. V. 379.

This, say the disciples of BROUSSAIS, is substituting one disease for another, and is producing internal perturbation. The charge is admitted. We apply our remedial agents to the internal tegumentary membrane, while they, by a much more operose method, apply theirs to the external surface by means of leeches, douches, medicated baths, blisters, cataplasms, &c. The practice of Broussais is equally a perturbing course, but applied to a different part of the tegumentary system, with this important difference, that, relating to the diseases in question, it is far less successful. In the administration of calomel, jalap, senna, sulphate of magnesia, cantharides and arsenic, the impressions are primarily and chiefly produced upon the stomach, small intestines, and auxiliary viscera. Tincture of cantharides, applied to the skin, produces vesication. In sufficient doses it must produce an analogous effect on the internal surface. The well known action of arsenic on the skin points out its effect internally. If a solution of tartrate of antimony be *frequently* given to a patient in peripneumony, to the extent his stomach can bear, and if it be prevented from passing below the stomach and duodenum by calomel and opium, there is produced a crop of pustules on the membrane in question, as is demonstrated by the pustules which appear in the mouth and fauces. And this has long appeared to me a satisfactory explanation of the success of the Italian method of treating pneumonic inflammation; that, by blisters externally, and a factitious disease in the œsophagus, stomach, and duodenum from antimony, the organ originally diseased is surrounded by artificial inflammation, and by the coöperation of the calomel and opium, speedily extricated from danger. If the antimony is allowed to pass into the large intestines, the internal counter-irritation in the immediate neighbourhood of the lungs is prevented, and the principal benefit of the practice is thwarted.

The fact is, the stomach and small intestines are the seat of injuries from without; there disease is first enkindled. By the salutary tendencies of nature, these organs are allowed to perform their functions without transmitting to the sensorium any notice of disease there, while the vicarious, morbid action is thrown upon other parts of the system, and, in patients predisposed, upon the skin. To remove this vicarious action of which the individual complains, we ex-

- cite impressions in the very seat of the disease, which are styled perturbations, but which being artificial, serve to transplant the original
- morbid action, and substitute a new one. This, after being continued from two to twelve weeks, wears out or eradicates the original
- disease, and then both the vicarious disorder without and the artificial one within necessarily cease.

Hartford, Conn. August 29th, 1831.

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ART. VI. *On the Use of Conium Maculatum in Affections of the Female Breast, and in Cancerous Ulcerations.* By STEPHEN W. WILLIAMS, M. D. late Professor of Medical Jurisprudence in the Berkshire Medical Institution.

I BEG leave to select for the Journal the following cases from my medical and surgical note book, in which I have long been in the habit of recording what I conceive to be important facts and cases.

*Cancerous ulcerations.*—Under this head I propose also to treat of the sequelæ of mammary abscesses, which, if neglected, frequently terminate in cancer. I am inclined to believe that a remedy will yet be found for the cure of cancerous affections, and I think the faculty have underrated the powers of *conium maculatum* in these cases. This medicine was in high repute with the ancient physicians; probably by them it was too much extolled, and like many valuable medicines which were employed by them, it has, from this circumstance, gone into disrepute. Medicine, like other things, has its fashions. Within half a century, bleeding and powerful depletion have been in and out of fashion at least half a dozen times. Bleeding is now in vogue to a great extent, particularly in chronic affections of the lungs and liver. A reaction will probably soon take place, for, like all violent complaints, a crisis soon obtains. I believe in no *catholicon* in any complaint: what may be useful in one may not be in another, or even in the same in different individuals, owing to peculiarities of constitution. Yet I think that facts in favour of *conium maculatum* are multiplying. The following have occurred in my practice. I am not able to state them so minutely as I could wish, as many years have elapsed since some of them occurred, and I took no notes of them at the time.

CASE I.—A woman from Hawley called upon me in the summer of 1820, with an indurated breast. Several months previously she had

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had a milk abscess, but I do not recollect whether it had ever been opened. At any rate the whole breast became completely indurated, and did not yield to any remedies her physician prescribed. At the time I saw her, the breast was large, the whole substance of it was indurated, unequal, and knotty, and all the integuments of it black. There were very slight constitutional symptoms. I directed the use of the white pond-lilly poultice, (*Naphe advena*,) for a few days, hoping by the use of it to induce suppuration. After this, if any hardness remained, I prescribed the powdered leaves of conium, commonly called cicuta, and directed them to be sprinkled upon the poultice, and if they could not be obtained, I advised the use of a plaster of the extract of conium, and to continue the use of it as long as any hardness remained. I directed at the same time the internal use of the extract, beginning with small doses and gradually increasing until constitutional symptoms appeared. I am not able to give a detail of the progress of the cure, but I learnt that she followed my directions, and in the course of a few weeks was completely cured.

CASE II.—Mrs. K. of Greenfield, soon after delivery, was severely afflicted with milk abscess, which suppurated, and was opened several times. It was many weeks before the abscess healed. After it did heal, the whole of the breast became indurated, and as hard as stone. Various discutients were applied, such as mercurial ointment, camphorated liniment and spirit, &c. &c. to no effect. I applied a plaster to her breast of the extract of conium, which she continued for several weeks, and recovered completely.

CASE III.—Mrs. G. of Sunderland, had borne several children. Soon after the first one was born, she had a severe milk abscess. She was not able to suckle her child any more from that breast. With each succeeding child she had abscesses in the breast, which became more and more severe. The indurations which succeeded remained from one pregnancy to another. At last obstinate sinuses followed, which were laid open in all directions; these were followed with very troublesome funguses, which discharged a great quantity of fetid sanious matter, and yielded to no remedies which had heretofore been administered. A celebrated surgeon who attended upon her repeatedly, told her that there was no other possible chance of saving her life, than by removing the breast by the knife. She was pale and emaciated, and evidently rapidly declining. She was unwilling to submit to the operation, and sent for me. I found her as above de-



scribed. I was inclined to believe that the surgeon was correct, and that the breast must be removed, but she was so anxious to try something else, that I consented to gratify her. I put her upon the use of the conium pill, and directed the use of the pond-lilly poultice, sprinkled with the powdered leaves of the conium. In a few days I saw her again. The matter discharged was much more bland, and less in quantity. It continued to decrease, and by the time that constitutional symptoms from the use of the pills manifested themselves, the sinuses were dried up. I then directed a plaster of the extract to her breast, which was worn till the indurations were completely removed. She recovered. She has since had children, but her breast has never troubled her any more.

CASE IV.—It is but justice to remark, that in a subsequent case I have used the conium without success. The case was, however, somewhat different. Mrs. S. of Conway, applied to me for advice in the winter of 1826. She was between forty and fifty years of age, and had ceased bearing children. She first noticed an induration in her breast a few months before. When I first saw it the whole breast was diseased, and of a stony hardness. It was much enlarged and puckered near the nipple. The skin was excoriated, and an ichorous matter was discharging from it. She had sharp, lancinating pains, and every indication of real cancer, attended with constitutional symptoms. It was my opinion that a resort to the knife was now too late. I directed the external and internal use of the conium, in which she persevered a long while without avail. A cancerous ulcer succeeded, which destroyed her in about nine months, which was the most rapid of any thing of the kind I had heretofore seen. This, and some other cases of cancer, forcibly reminded me of the lines of old TURNER, and likewise of the almost absolute necessity of immediate extirpation of all malignant scirrhusities of the breast.

“Is there a man you hate,  
Or wish the hardest fate,  
Bid neither plague nor pox,  
Nor fam’d Pandora’s box,  
Bid neither gout nor stone,  
But, letting these alone,  
If wretcheder you’ll make him,  
Then bid the *cancer* take him.”

CASE V.—The following case promises a better result. Mrs. F. of Buckland, called upon my father and myself to consult us upon an affection of her breast, in the summer of 1827. She was between



forty and fifty years of age, and her youngest child was about four years old. She had been troubled with milk abscesses with her former children. When young, her breast had been injured, probably from pressure from the use of stays, a prolific source of cancer of the breast. The nipple was flattened, and she was never able to suckle from that breast. At the time we saw her the nipple was drawn in, and the breast around it was much puckered. It had been in that situation several months. The whole circumference of the areola was enlarged and tender. There had been an abscess under the lower part of the areola which had discharged, and still continued to discharge a small quantity of thin matter. The opening would scarcely admit the head of a small probe. It occasionally scabbed over. In the upper part of the breast there was a scirrhus tumour, of a stony hardness, about the size of a butternut. It hurt her to press upon it. She was of the nervous temperament, and had been taking medicine for some time. When we saw her, her physician pronounced, with a great deal of confidence, that it was a case of real cancer, and said nothing but the knife would effect a cure. We prescribed for her the external and internal use of the extract of conium, and a continuance of the blue pill, which she was then taking. I saw her a fortnight after; the swelling around the areola had subsided; the scirrhus had also diminished, and the soreness had left her. The matter discharged was of better consistence. Directed to continue the remedies. Saw her again in another fortnight; she was under the full influence of the conium. She said it made her drunk. Her breast appeared, in every respect, better, and there was every prospect that she would soon recover, and I afterwards learnt that she did recover.

CASE VI.—The following case shows that the conium has been successful in a case of *real open cancer*. In July, 1827, I took a short excursion upon our western mountains. On my journey I was requested by Dr. DEANE, of Colrain, to visit a patient of his, Mrs. S. who was troubled with an affection of the breast. She had been confined to her room several weeks. On opening the door I most sensibly perceived that most disagreeable smell which is so peculiarly and characteristically attendant upon open cancer. I examined her breast. There was an open, deep, ragged ulcer upon it, nearly the size of the palm of my hand. It was discharging a thin, ichorous, and highly offensive matter, in large quantities, and occasionally blood. It had somewhat the smell of old brass or copper when exposed to heat and moisture. The edges were jagged and callous, and

the whole breast was of a scirrhus hardness. It had been open several months, and there had been an induration in her breast several years. Her constitution was much affected, and she was confined to her room, and the principal part of the time to her bed. The pain in her breast was intolerably severe. The stench was so great in her room that her attendants could not bear to stay with her. At the time I saw her she was taking large doses of laudanum to alleviate her distress. As I had no expectation of curing her, I advised Dr. Deane, merely for palliatives, to wash the breast freely with salt and water, to make use of a carot poultice, sprinkled with powdered conium, and after the stench was removed, to use the conium plaster, and at the same time to put her upon the internal use of extract of conium, until constitutional symptoms were induced. On the 12th of October, I saw Dr. Deane, who informed me to my great surprise, that Mrs. S. had completely recovered, and that her breast was entirely healed, and as smooth as his hand. The next summer I was called to visit a patient in Colrain, and called on Mrs. S. and found her perfectly well.

I have since used the conium externally and internally with complete success in the case of Mr. H. N. of Greenfield, who, for a number of months, had been affected with scrofulous indurations about the glands of his neck.

*Deerfield, Mass. Sept. 1831.*

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ART. VII. *Reports of Cases treated at the Baltimore Alms-house Infirmary.* By THOMAS H. WRIGHT, Physician to the Institution.

CASE I.—*Vaginal tubercle.*—The following case presents a specimen, uncommon for its magnitude, of that form of morbid growth generally located at the outlets of the cavities, upon or near the meeting line of the mucous membrane and the common skin. A young woman, J. Griffin, about twenty years of age, represented to belong to the unhappy class of female profligates, was brought to the Baltimore Alms-house. The persons who delivered her to the charge of the institution gave no account of the cause, manner, or other circumstances of her illness. Its nature was inferred from her course of life, and on that presumption she had been placed in the syphilitic ward for females. On the day after admission the case came under examination, presenting the following signs. Form much wasted, face sallow and wan, deep hectic flush on both cheeks, eyes in-

jected, expression wild and frightened, lips dark red and parched, fauces inflamed, gums spongy and foul, tongue swollen, strong flesh-colour, surface dry, polished. Breathing was hurried, skin hot, pulse small, and past counting with precision. The intellect was disordered, perceptions confused, mind agitative, with a cast of delirious wandering in all the mental operations.

In addition to the symptoms noted, there was an odour from the person of the patient which revealed the existence of some local affection in the sphaceloid state. To inquiry respecting the condition of the external sexual organs, it was communicated by the nurse of the ward, that there existed something about the female parts of uncommon appearance, and in a very foul state. On inspection, a pyriform tumour of great size was observed; its larger extremity below, and suddenly contracted above into a neck or peduncle, connecting it with the left side of the vagina, which was dragged out or prolonged unnaturally by the weight of the pendant mass. The tumour was regular in form, of firm texture, occupied all the upper space between the thighs, and from its size and solidity was supposed to be from five to six pounds in weight. The general aspect of the mass gave the representation of a two-fold manner of development. A regular fibriform tumour seemed to have been first produced, and afterwards a dense crop of small tubercles of the verrucous kind, appeared to have sprouted from the surface of the primary body, and now completely and uniformly overspread it. These surface vegetations were about the size of a filbert, diminishing in bulk toward the root or neck of the tumour. They were round, coarsely granular on the exterior, and bore no small resemblance to our common blackberry in the unripe state. The lower extremity of this great mass, for about one-fourth of its whole length, was in the sphaceloid condition; smell putrescent, colour black red, cuticle desquamated, incessant exudation, circular line of demarcation to sphacelus, deep structure somewhat shrivelled and collapsed.

By the copious issue of sanies with some hæmorrhage from the sphaceloid extremity of the tumour, the whole mass was blood-stained, so as to disguise its real character and cause it to appear as belonging to the tumours of fungoid constitution, for one species of which, (the cauliflower,) it was at first mistaken. Examination subsequent to the cleansing of the parts showed the whole appearance as above described, and corrected the erroneous opinion first formed. It was now evident that the tumour was a magnified specimen of that form of excrescence, which, under the denomination *verruca*, or warty tumours, infest the vestibulum of the female parts of genera-



tion. The present example of that kind of production was not only uncommon for its magnitude, but possessed characters of solidized organization, belonging rather to the fleshy tubercle than to the verrucæ proper. Its locality, its covering of coarse skin, and above all, its surface studded with hundreds of minor warty excrescences, pointed out its relation to that class of tumours, and in connexion with its size and solidity seemed to indicate in the present specimen a combination of the tubercle and the wart. The mass appeared abundantly vascular, as exhibited both by a tendency to somewhat free hæmorrhage, and the detection by pressure on the neck of the tumour of bold pulsation at several points.

The case was at first in no condition for immediate resort to operation. The serious exhaustion of the patient on admission rendered attention mainly and urgently necessary to the constitutional state. To tranquillize and sustain were the indications of the moment, to which removal of the local evil was a remote and secondary consideration; the morbid aspect of the tumour was the consequence, not the occasion, of intense constitutional disorder, developed from other and unknown causes. The tumour was directed to be enveloped in cloths charged with the spirit lotion, applied warm; the general means, small cordial anodynes, (spt. lav., ammoniac, and tinct. opii,) in effervescing draughts, frequently exhibited until they produced their calming influence. These were aided by sponging with cool spirits the abdomen. Diet light and moderately cordial; rice-jelly, with small addition of wine.

In a few days the aspect of the case was sensibly bettered. Sleep had been procured; the tumult of mind and body was allayed; inclination for nourishment a little restored; strength somewhat revived. Advantage was taken of this state, to remove the now completely dead and offensive portion of the tumour. It was separated by a pair of large strong scissors—but the division was not easily effected, requiring much force and numerous cuts. The substance was tough and harsh, dividing like leather, or raw hide, in the macerated state.

On the decline of fever, and of the signs of gastro-intestinal irritation, the patient was put on the use of bark infusion with the mineral acid, and diet reinforced. Her improvement, seconded by a constitution naturally good, was constant and rapid. The remains of the tumour, still equal nearly in bulk to a small child's head, assumed the hue and actions of healthy structure; the point from which the dead portion was removed, partly by section, and in part by spontaneous separation, contracted, and was closing in by active

cicatrization. The tumour now presented the following character and connexions:—The mass external to the vestibulum, as before described, was a large oval body, solid, inelastic, and heavy, covered by an extra growth of innumerable small tumours, or tubercles, of the filbert size; colour of the tumour white, resembling common integument, only very coarse, or papular. The neck of the tumour was about two inches long, three broad, (from above downwards,) and one inch thick; its inner face, next the ostium vaginæ, was smooth, like the mucous membrane of that canal on the stretch; the external side like common skin. The labium majus of the left side, with its common covering, was on the outer side of the neck of the tumour; the nymphea was distinguishable on the inner surface of the same part; the latter body very small, a transverse ridge merely, scarcely elevated above the plain of the surface. The root of the tumour thus appeared to protrude from between the labium and nymphea of the left side, coming out betwixt the ramus pubis on one side, and the vaginal expansion on the other. The flattened, but thick root of the tumour, could be traced some extent up the left side of the vagina, covered by the wall of that canal, but its exact place of origin or termination above the ramus pubis could not be distinguished.

The whole mass was removed by operation, in one of the modes commonly employed for excision of such tumours. To prevent much loss of blood, as well as with the purpose of dividing the neck of the tumour as high as possible, a strong needle, armed with a coarse double ligature, was pushed through the centre of the root close upon the ramus pubis. The ligatures were tied above and below, pressing them well toward the base at the time of drawing the loop. The section was made with a scalpel, cutting across the neck just without the ligatures. Notwithstanding the means employed to obviate hæmorrhage, the dash of blood from the face of the cut was profuse; the ligatures did not effectually compress the portions included, and it was necessary to command the bleeding by firm pressure with the fingers against the ramus pubis within, until the vessels could be taken up. This part of the operation was tedious and difficult, in consequence of the alarm and struggles of the patient, and great retraction of the root of the tumour within the vestibulum. By the tenaculum and the needle, where the latter suited best, the hæmorrhage was controlled without immoderate loss of blood. There was but little inflammation or swelling after the operation. The young woman regained her health rapidly, and in six weeks was perfectly well; reported by the nurse of the ward to be without any thing unnatural about the parts from which the tumour had been removed.

CASE II.—*Glandular Tissue, Indurescence, Suppuration, and Excrescence of the Testicle, mistaken for Carcinoma.*—A young man, twenty-five years of age, wagoner by occupation, entered the Baltimore Alms-house with disease of the testicle, ensuing, by his report, to severe and neglected gonorrhœa. State of parts on admission: left testis enlarged to thrice its natural size, hard in places, inelastic, not tender to moderate pressure; surface of the gland rough and fibrous, as if traversed by numerous chords or thin bands; scrotum dark brown colour, contracted close around testis, at many points indented by union with the membranes and gland. From the whole front of the testis protruded a mass of the size of a pullet's egg, of coarse, granular substance, secreting profusely a mixture of sanies and pus. The base of the excrescence was broad and hard, its body elevated, flattened on the top—whole bulk exceeding the size of the testicle; scrotum around the base of the vegetation thick, adherent, and callous feeling. By pressure on the parts, a soft pulpy matter could be made to ooze out at some points where union of the scrotum to the base of the excrescence was incomplete. The funis of the left testicle was thick as a finger, knotted and hard; superficial lymphatics of both groins enlarged; cellular tissue, same seat condensed; inguinal glands swelled and tender to touch. Right testis retracted high, very little altered from natural state, except by adhesion of scrotum, vaginalis, &c. at a few points. Duration of the local disease now, by account of the patient, eleven weeks; parts had never been very painful; occasional sense of stinging and burning in the part—the chief unpleasant feeling.

The man represented the affection of his testicle to have commenced, (while he had gonorrhœa,) by general enlargement of the gland, followed by a dark red swelling on the front part, which slowly gathered, burst, discharged a reddish matter for some time, then large granulations shot out from the cavity of the abscess, and continued to grow and overspread the gland, as they appeared at the time of his admission into the house. The parts had been constantly irritated by riding on horseback in his employment as teamster. The personal appearance and condition of the subject of this affection was strongly marked by signs of constitutional disorder. Form, naturally stout, was considerably emaciated; skin flaccid and sallow; face contracted, look desponding; tongue furred; appetite indifferent; bowels laxative; distressed by flatulence; pulse small and quick; surface dry; sleep irregular and uncomfortable. By all the signs, local and constitutional, the disease of the testicle seemed to be represented as one of the malignant class of tumours, fungus hematodes, or medul-



lare. Operation in prospect was adverted to, as soon as by rest, regulated diet, and suitable alterative medicines, due preparation of the system was accomplished. The patient was put on the use of Plummer's pill reduced in strength, first with opium added for loose bowels, and free use of the diet drink; regimen, boiled milk, rice, and bread. The part was treated by simple fomentation and poultice.

The general circumstances of this case were so much mended after some time in hospital, (end of second week,) that the patient both looked and felt very sensibly better than when admitted; his complexion, spirits, appetite, and strength, were greatly improved. The local disease was not materially altered, otherwise than by greater cleanness, a better secretion, more puriform, from the ulcerous surface; better colour of the fungous growth, and less soreness of the parts, particularly of the inguinal indurations. These changes, slight as they were, taken in connexion with the obvious melioration in the general functions, under mere rest and simple treatment, seemed so strongly to contradict the presumption of malignancy in the disease of the part, that as soon as they were displayed in an unequivocal manner, I did not hesitate to recal the opinion first expressed, and to deprecate the contemplated resort to operation, as unwarranted by the present aspect and circumstances of the case. The local disease was now exhibited as essentially the result of irritable inflammation, aggravated constantly by manner of life, exposure, and neglect. It was noticed as probable, also, that the strumous diathesis was present, and concurred to complicate the affection, both by additional irritability in the habit, and the peculiar tendency it is known to impart, to conversions of textures not belonging to the common forms of inflammation. Hence the chronic induration of the tissues, partial, (tuberculoid,) suppurative degenerescence, and subsequent vegetative development in the part; hence too the manner and form of sympathetic irritation and change in the neighbouring lymphatic and cellular structures.

On this pathology of the affection it was conceived highly probable, that perseverance in the same general regimen, with the steady employment of caustic to the part, would accomplish enough to exclude occasion of resort to direct surgery. By maintaining a good state of the general system, and constantly repressing the products of morbid action in the part, the irritability on which that action was sustained would be extinguished, and a healthy process be set up for repair of the organization. Time realized this expectation. The fungus was touched over daily with the solid nitras argenti, and after-

wards wrapped in poultice. The application gave little pain, and did not excite inflammation. After a few days' use of the caustic, the bulk of the morbid growth was sensibly lessened; continued employment of it brought the tumour down to near the level of the skin, while the discharge from its surface became good, and the margin of scrotum around the base of excrescence softened, contracted, and was cicatrizing.—In a month the mass of vegetation from the testis was demolished, and the general health of the patient reëstablished. As the excrescence wasted, the enlargement of the body of the testicle was found to reduce in a gradual manner, and to resume something of its natural form; its irregular hardness and fibrous feel also diminished. The treatment by caustic was continued as long as any tendency to excrescence was apparent; the poultice was laid aside when the marks of inflammation were dissipated, substituted by dressings with ungt. oxyd. hyd. rub. The part finally cicatrized, leaving the body of gland enlarged in some degree, but without evident signs of disease. The secondary affection of the lymphatics, ganglions, and cellular tissue of the groins, subsided so as to be inconsiderable at the time the man left the hospital.

CASE III.—*Fibro-serous Tissue—Osseous Conversion.*—A man, sixty-five years old, school-teacher by profession, was admitted into the Baltimore Alms-house, on account of a scrotal tumour, which had become so inconvenient as to prevent continuance in his usual occupation. The patient betrayed marks of age beyond his time of life. Form thin, skin loose and shrivelled, hair perfectly blanched; in other respects reported himself to be pretty well, had not been sickly, was not conscious of any other disease than the scrotal enlargement for which he had come into the house. The commencement of the tumour was dated by himself five years back; origin spontaneous, or without any known cause.

On examination, the scrotum was developed to a size seldom attained in mature hydrocele, but the tumour differed in shape from common enlargement by vaginal dropsy. The development was almost wholly on the left of the raphé scroti; tumour of that side obtuse conoidal, the apex below; greater diameter near the exit of the chord from the ring. The covering of the tumour, the scrotum, instead of being thick, and somewhat rugous, as is common in hydrocele, was thin, smooth, and glistening. Its thinness was quite remarkable, being scarce equal in density to the skin on the back of the hand. This attenuated integument played freely over an enclosed body; the latter so firm as to yield scarcely at all to pressure, and that only in

places, there being parts or patches of the tumour so hard as to give no sense of sinking under compression; nothing of the elasticity which was distinguishable at other points or places. After much examination by the touch, the reflection of light, &c. the tumour was made out to be a hydrocele of unusual form, and with the peculiarity of the vaginal coat studded by patches of earthy conversion. The plates of calcareous matter in the vaginal cyst were numerous, hard, and smooth on the surface next the scrotum. On the right side of the scrotum existed another tumour of much less size than the one just described. This second tumour reached only half the length of that on the left side, was about the bulk, and had very much the form of a large hen's egg, was perfectly regular and smooth on the surface, with the investing scrotum adapted closely to it, and this integument very much attenuated, as in the case of the other, or left tumour. The body contained in the right side of the scrotum was heavy for its bulk, and every where hard and unyielding to pressure. While the large tumour of the left vaginal sac was irregularly hard, and sensibly compressible in places, (the elasticity of strong membrane tightly distended,) the smaller body of the right side was equally and positively resisting at all points, and wholly unalterable in form by any force which it was deemed allowable to use. The figure of this tumour, the equal surface over which the scrotum glided smoothly, and the feeling imparted to the hand while examining it, all forcibly suggested the resemblance of an egg enclosed in a covering of skin. The lower end of the body was something largest, smaller extremity presenting to the ring. The chord could be distinctly traced entering abruptly, or attached to, the upper end of the tumour, was thin, soft, and perfectly natural, to the point where it entered, or appeared to enter, the small end of the body embraced by the scrotum. ... \*

All the marks exhibited by the tumour of the right scrotum made it plain beyond doubt, that the tunica vaginalis testes of this side had undergone complete and universal calcareous conversion. The kind of resistance to the touch was wholly different from that quality of firmness, (often very great,) possessed by hydrocele when the sac is tense and the membrane thickened. In the case before us it was positive hardness, a form unchangeable in the smallest degree at any point, and a surface uniform and equal, insomuch that the scrotum, (as before noticed,) moved over it as if having no connexion whatever with it, other than as a containing envelope. Neither of the tumours were in the least degree painful or tender to pressure, and had never caused inconvenience of any sort but by their size and weight. The space of chord which was free and pliant at the upper end of the



tumours, was sufficient for safe and convenient excision, and after due consideration, the operation, (by castration,) was judged advisable, and recommended. But when the patient understood that the relief offered him was no less than actual emasculation, his timidity, or his pride, took the alarm, and, under a privilege of going out for some purpose, he left the house, and did not return.

**CASE IV.—Muscular Tissue—Calcareous Deposit.**—Among the conversions to which the muscular tissue is liable, suppuration, induræscence, pulpy or lardaceous degeneration, &c. it has been doubted by pathologists of high authority, whether the muscular texture proper, was ever the seat of calcareous conversion, or submitted to that change commonly discriminated by the term ossification. The following case may be added to the scanty record on the affirmative side of this question, and appears to furnish, substantially, the kind of proof which the controversy calls for. Yet this case does not fill the vacancy of evidence on that part of the question which demands an instance of ossification in the muscular fibre, wholly primitive in the seat where it is found; originating in, and restricted to the muscular texture, and not produced or propagated to that organism, by extension or encroachment of the ossific process set up in other tissues, to which such a change is easy or common.

A man, about thirty years of age, was brought to the Baltimore Alms-house, January, 1831, in a state of low exhaustion, ensuing to the joint influence of long intemperance, and much exposure to the rigour of the season. The endeavours to sustain him proved ineffectual, and he died on the third day from his admission. In the examination of this patient when first brought into hospital, it was noticed that one of his legs was very much deformed by morbid enlargement, of irregular figure and singular hardness. There was extensive cicatrization on the leg, as if from former sores; but at this time the surface was no where ulcerated. After death the deformed leg became the subject of examination, and the hard enlargement, inequality, &c. of the limb, was then found to be caused by exostosis of the fibula in its whole extent. Two parallel spines, or ridges of super-ossification, were produced, from the edges of the fibula down its entire length; they were more than an inch deep, and spread outwards from their line of origin, so as to give the fibula the appearance of a long bony trough, wider at top than bottom. Between the anterior spine or ridge, and the tibia, and raised considerably above them both, appeared a bundle or tract of matter, distinct from both bones of the leg, but nearly as solid and bone-like as either in the greater

part of its extent. In places this interposed substance was made up of hard and soft matter intermingled, and at those points retained a good deal the colour, texture, &c. of muscular fibre, blended with much earthy matter. In other places, some inches in length, the structure of the part resembled an entire rough, bony body. Where the substance under consideration was least solidized, it was very much increased in bulk, forming at two or three points in the length of the leg, large knobs in a semi-converted state, thus showing the cause of the general increase of volume, as well as irregularity of form, noticed in the limb on first inspection of the case. This intermediate osseo-muscular structure was composed of all the muscles on the anterior aspect of the leg between the bones—the *tibialis anticus*, *extensor proprius*, *pol. ped. extens.*, *long. digit. ped. sc.* all degenerated more or less completely into osseous matter, and fused into a complex mass.

Although it appears probable that super-ossification in the present instance was first set up by the periosteum of the fibula, and was propagated to the inter-osseous muscular tissue, yet the conversion of the muscles does not appear to have been accomplished by direct extension, or mere augmentation of earthy matter from the primary source of deposit. The semi-ossified mass of muscles was distinct and separable in its whole course from the bones of the leg, and by osseous development of the fibula inwards, had been pressed up so as to lie above them both. The stimulus or irritation to morbid secretion may have been imparted by similar action in the neighbouring tissues, but the earthy deposit amongst the muscular fibre seems to have been properly the work of its own vessels of nutrition.

CASE V.—*Vascular Tissue—Dilatation, Varix, &c.*—A middle-aged woman, long resident in the Baltimore Alms-house, and subject to epileptic attacks, presented the following abnormal developments in part of the vascular system. On the right half of the frontal bone appeared four distinct tumours, or prominences, of a soft, compressible character, and made up apparently of numerous cysts or cells communicating with each other, and thus composing one large pouch or sac—irregularly defined in its base, and lobulated on the surface. One great sac, larger than the rest, was placed near the outer angle of the eye; another occupied the midspace of the superciliary ridge, overhanging and continued upon the upper eyelid, a third stood on the top of the *os frontis* near the angle of junction with the right parietal, and a fourth was directly over the line of union of the internal

angular processes of the frontis, where they receive the ossa nasi, overlaying the latter bones, and deriving its covering in part from the skin of the nose. All those tumours, or pouches more properly, pulsated strongly in correspondence with the stroke at the wrist, and could all be flattened or emptied by pressure with the fingers.\* The coverings of those pouches, the common skin of the parts, was thin and delicate, apparently much attenuated and weakened by distention.\* Besides the greater sacs already described, numerous small risings, size of large peas or beans, were dispersed over the temporal portion of the right frontal and parietal bone, and a few of the same kind before and behind the ear. These smaller tumours also kept time with the general pulse of circulation.

The state of the arteries on the opposite sides of the neck and head, in this case, was very palpably different. Those of the left side, the common carotid and temporal, &c. felt nearly as they are found under ordinary circumstances; there was, however, some departure, both in the size and action of those vessels, from a strictly natural or common state. Their volume was more developed to the touch, their action sharper, with a very perceptible thrill or jar in the stroke, of the kind denominated aneurismatic. It was in the arteries of the right side of the neck and head, however, that all those characters of faulty state and action were strongly displayed. The common carotid was here very sensibly enlarged; its undue size and overaction palpably evident, not only to the touch, but to sight; its action uncontrolled by pressure, and the current through it attended by a thrill so bold and distinct as to impart an unpleasant grating sensation to the fingers. This peculiarity of movement became greater as the vessel was traced toward its root, and was particularly strong in the innominate. The dilatation of the common trunk of the artery was participated by all the branches of the external carotid. The occipital, in its tract along the base of the skull, was plainly visible in form and action, and felt scarcely less in size than the little finger. This vessel, as well as the front and middle branches of the temporal, gave distinctly the thrill so remarkable in the common carotid. The general circulation in this case was every where more vivid, marked by a higher tone of action in the heart and arteries, than is common in the female habit.

\* The cysts could be depressed by the point of the fingers until something like incavation of the bone was perceived; represented by a hard, rough margin, corresponding to the outline or base edge of the tumours.



The patient's report respecting the duration of the tumours about the head, dated them back about three years; for which period also she had been subject to epileptic paroxysms. The latter had been renewed from that time at monthly intervals, more or less regular. Whether the fits of epilepsy anticipated, in point of time, the swellings on the head, was not clearly discriminated in her own recollection; she thought they had occurred much about the same time, but inclined to the opinion that she had suffered one or two attacks of epilepsy before the swellings on the head were observed. She represented herself to have been much subject to head-ache prior to occurrence of fits, or the local affection, and still suffered greatly from frequent and violent pain of the head. She complained likewise of almost constant annoyance, particularly of late, by a sense of fullness, with a peculiar irritation, in the membranes of the nostrils and palate.

The regular and strong pulsation of the whole group of tumours on the side and front head, their locality in the tract and at the terminations of the temporal artery, with the palpable enlargement and peculiar thrill in the carotid of the same side, all seemed to mark the case as one of arterial dilatation complicated with varix. The case was examined by many physicians and surgeons, who concurred in regarding it as a varicose affection of the arteries of the part, with probably something of the aneurism by anastomosis in the seat of the large pouches. The nature and tendency of the local developments, with their probable agency, if not in producing, in aggravating the epileptic concomitant, suggested a practical resort, which was deemed the proper corrective of the former, and likely at the same time to avert or mitigate the latter. Tying the common carotid was recommended as essential to the cure of the local disease, and affording a chance of arresting the epileptic paroxysms. Such a measure was also indicated by other considerations besides the prospect of relief, or the possibility of cure, it was supposed to offer. The tumours were manifestly on the increase, and the integument of those sacs already very thin, appeared too likely, at some moment, to give way suddenly, and in the absence of proper assistance, might bleed dangerously or fatally. This contingency was the more to be apprehended, inasmuch as the sacs were observed to be always greatly distended, and of deep colour, during the fits of epilepsy.

On the other hand there were considerations of a negative kind as to the success of an operation, which greatly abridged the ground of expectation or dependance on such a mean. Admitting the palpable

superaction, and the varicose state of the arteries on the right side of the head, as the possible origin of the epileptic phenomena, or if not the source of the affection, by all probability a cause of exasperation, and an impediment to its cure, was it certain, or likely, that tying one, or even both carotids, would afford sensible, or permanent relief, in the true seat of irritation and embarrassment leading to epilepsy? Was the state of superaction and dilatation confined to the external carotid distribution? or was it not greatly to be suspected, that the internal carotid branches were also the subjects of preternatural action, and probable varix enlargement. If so, the vertebral anastomotics within the head were sufficient to supply all the congestive derangement required to sustain and perpetuate the epileptic contingency.

This patient had been almost two years in the house suffering attacks of epilepsy, at intervals seldom exceeding four weeks; her general health during the time was very much the same. The only medical regimen consisted in the practice of such depletion, by general bleeding, as the health of the common functions permitted, simple diet, and abstinence from laborious employment or undue exertion. But little change was visible in the state of the patient; the tumours on the head increased more by slow dilatation and thinning of their coverings, than by very obvious augmentation in their volume or extent. Attacks of epilepsy were renewed, with various force, in different paroxysms.

In July, 1830, the patient was attacked by what at first seemed one of her usual severe head-ache's, followed by epileptic invasion—but which, instead of passing off as before, by slow revival of consciousness, &c. glided into a train of symptoms resembling profound encephalitis. She became delirious for a time, soon lethargic, and fell into deep stupor, ending in death after twelve hours duration; third day after seizure.

For the purpose of tracing the vessels, and for preservation of the parts, as a morbid specimen, it was determined to fill the arteries of the head with the common injection. A pipe was fixed in the root of the aorta, the descending trunk and the subclavians closed by ligature, and the injection passed, until from the quantity thrown up, and the distended state of the superficial vessels, the arterial system of the head was supposed to be fully injected. Although the branches of the temporal artery were filled in all its ramifications, the main purpose of the injection had wholly failed; not a particle of the injection had entered the sacs on the head, with which the artery appear-

ed to communicate freely during life, imparting the fullness and pulsation they then possessed.\* A few only of the smaller cysts in the tract of the middle temporal branch were raised up to the knotted form in which they appeared before death. The large pouches at the angle of the eye, on the orbital ridge, the top of the os frontis, and over the naso-frontal junction, were flat and empty. The total failure by the injection could only be explained on the presumption, either that the communication of the temporal branches with the cysts on the forehead had been by very small channels, which became obstructed by coagula after death, or else that the great pouches had not received their fullness and pulsation directly from the temporal branches, as was supposed. The latter conclusion appeared most probable, and at the same time pointed to the veins as the route of communication with the now empty cysts. This conjecture was realized on trial. When a pipe was fixed in the superficial cervical, the trunk of the facial or angular, in the neck, and the injection pushed on, in a moment every sac was swelled out to the size and shape presented in life. All the cysts were filled, the pristine form accurately developed, and the external resemblance to the living state completely restored. The whole character of the local affection now appeared to be changed. Instead of a specimen of arterial varix, or anastomotic aneurism, for one of which, (or rather a compound of both,) the case had passed with all examiners, injection appeared to have revealed an example of morbid dilatation in the venous system, anomalous by the fact of immense varicose development in the capillary series, the venous radicles of that system. It proved afterwards that the case was of complicate character; and that while the more prominent forms of vascular tumour were really in a part of the venous capillaries, the arterial series of the head had participated largely in the process, both of general and special dilatation. Definite arterial enlargement, (varix,) was as plainly marked, and scarcely less matured, in parts of the carotid distribution, as the venous varices just described. Arterial and venous developments were equiponderant.

The tumours on the forehead as now reformed by the matter of injection, were about the size of walnuts, and appeared to be made up

\* It ought to have been mentioned, in describing the cysts, that deep and strong pressure on the right carotid constantly subdued the pulsation in them, to a great degree, and when the pressure was forcible enough to shut the artery in the neck, it extinguished all movement in the sacs, though they still remained full.



by dilatation and anastomosis of the deepest subcutaneous veins; for above each tumour was spread a dense plexus of small veins, finely injected, and overlaying the tumours as a vascular arch or web. The large tumours were closely applied to the cranium, and so firmly attached in their place as to seem imbedded in the bone within the area of their base. In some of them this was found to be the fact: by pushing a common pin obliquely through the margin of the tumours, it penetrated the outer table of the cranium with great ease—the resistance by the bone not exceeding that of a piece of dried bladder; part of the cysts containing the wax were evidently inserted into the cranium as deep as the middle structure, lattice-work, of the skull. The rough and incavated feel of the bone within the limits of those tumours, which was discriminated by pressure during life, was thus explained.

The arteries of the opposite sides of the head were in a very different state. Those of the neck were enlarged on both sides, but the common trunk of the right much more voluminous than its fellow of the left.\* The most palpable inequality of size, however, in the two sets of vessels, was found in the branches of the external carotids. The right superior thyroid was as large as a crow-quill, and though the sublingual and facial were under natural size, the occipital again rather exceeded the ordinary volume of the common carotid. The temporal was more than twice the size of the same vessel on the left side, and the branches of the former exceeded those of the latter, in the same ratio, (twofold,) both in number and size: the whole right side of the head, in fact, was overspread by a coarse web of large tortuous vessels, connected by frequent anastomoses. In only one point on the surface of the head did the present state of the arteries realize the idea which had been formed of their condition during life. About the middle of the posterior temporal branch, was a tumour or knob, the size of a small marble, formed by the abrupt dilatation of the lumen of the artery, now filled up and defined by the matter of injection. This was a solitary exhibition of true arterial varix in the set of arteries which had been supposed to betray numerous and large varicose developments. The actual state, then, of the external arteries of the right side, of the head was nearly universal dilatation, but that change general and equal, (proportionate,) every where, with one point only of extra or special enlargement.

\* The right carotid, one inch above the innominatum, measured one inch and five-eighths in circumference; the left, at the same point in the neck, one inch and one-eighth.

It appeared probable that the process of dilatation was not confined to the external arteries of the right half of the head. When, by removing the globes from the orbits, the ophthalmics came into view, the relative difference of size was as remarkable in them as in the superficial vessels of the two sides: the right ophthalmic was more than twice as large as the left. On examination of the vessels within the head, it was found that the morbid development was proportionally much greater in the cerebral arteries than in those of the cranium. Both the carotid and vertebral members of the great basilar circle were astonishingly enlarged. The communicans of the right side was equal to an ordinary little finger, and bulbous in three places; a knob near the carotid root of this trunk was as large as a musket-ball. The basilaris was rather more than an inch in circumference, and the right vertebral, immediately on rising up to meet its fellow, swelled out into a pouch, which, filled by the injection, was larger than any other of the tumours or knobs in the basilar series. The left communicans was enlarged, but much less so than the right, and it also exhibited points of particular or definite increment of the saccular form. Thus the arteries of the basis cerebri, besides being generally increased in size, were also eminently varicose at many points: the whole circle, and its principal branches, were singularly tortuous, anastomotic, and knotted.

The condition of the arteries of the brain confirmed the surmise about their state which, during the life of the patient, had been urged against the probability of benefit by operating on the right carotid. The extent and relations of the vascular dilatations within the head, rendered it plain that the morbid excitement, or congestions to which they were instrumental, were unsusceptible of counteraction by any means short of total interception of all the channels by the neck. Both the carotid and vertebral members of the basilar circle were dilated and varicose, and every where accessible to the current coming in at any point of the circuit. Whether the relative greater advance in change of capacity in the arteries within the head, than in those of the external carotid system, is to be taken as proof of prior departure from the normal state by the former, can only be conjectural: neither would the settlement of that question determine whether the epileptic state of the patient was the cause or the consequence of degeneration in either set of vessels. The time of origin of such change in the cerebral arteries would remain indeterminate, and the patient herself never was able to realize whether the fits preceded the tumours on the head, or followed their appearance: she supposed them to have taken place much about the same time.

The tone of vascular action in this case had been found habitually above the par of natural excitement. The pulse was always sharper, harder, and more frequent than is common in health; there was also a perceptible thrill of the aneurismatic kind to be felt in all the principal trunks, even of the limbs. The entonic character of action had become constitutional, and was participated by the vascular series every where, and that habit, the usual forerunner of change of capacity, was marked by its common results. The action of dilatation was traceable in most of the greater channels of distribution; but it was in the right carotid, and its branches, that superaction and dilatation were prominently displayed. For this speciality of morbid action and change it is difficult to find an explanation. Enlargement was regular, uniform, and proportionate through the series, from the root in the innominatum to the terminal branches, yet the arterial tissue seemed every where natural—no form of disease or decay in the texture of the coats.

Another phenomenon presented by this case is of difficult solution. It is interesting to know the cause of pulsation so distinct and constant in the sacculated extremities of the facial or angular veins, the superficial veins of the forehead. Was the pulsation at the points in question the effect of successive impulses commencing at the heart, whose momentum was propagated reversely through the descending blood, or the result of a plethoric state of the whole venous system of the head, produced and maintained by habitual overaction of the heart and cephalic arteries? The more distinct statement of those questions would be, first, whether from excessive action of the heart, the ventricles particularly, the return blood of the head was in some degree checked or intercepted at the right auricle, and by the same forcible contractions a successive movement of repercussion or undulation was imparted to the column of fluid resting there, sufficient to be sensible or to give pulsation in the extreme vessels. If pulsation in the primary veins could be thus renewed in accordance with successive reaction, or a certain momentum thrown back by the ventricles, then the operation of the same power would serve to explain the primary change of condition, or the abnormal developments which those vessels had undergone at their extremities. That strong excitement or overaction of the heart may cause a degree of sensible repercussion in the descending venous series, appears to be established, if the statements are credible which we have on respectable authority, viz. that in high irritation of that organ all the superficial veins of the neck have been found beating visibly and palpably in concert with



the pulse. (Hall on Vascular Irritation.) The second branch of this question, is whether continued overaction of the heart and arteries was capable of producing a plethoric state of the brain, with such remora in the sinuses and venous system of the head, internal and external, as would occasion the momentum of the blood entering by the arteries to be communicated to the whole mass of fluid delayed in its return, and thus to fall with a special shock on the extreme veins. If the brain be incompressible, its venous system engorged, and the arteries of the head in full, or superaction, as the blood enters with pulsation, the stroke, in the given state of the veins and sinuses, must be every where imparted to the fluid of that system, giving a correspondent movement or successive undulation, terminating at the venous roots or origins. The sinuses, by their capacity, figure, and defence from strong membranes, are best fitted to resist impulsion of their contents, and thus to direct it toward the extreme branches. Now, a shock of this kind, scarcely palpable among the minute and subdivided terminal series in their normal state, might become very sensible, if at any point or points, by dilatation and anastomosis, many of these radicles came to terminate in one or more cysts. Something analogous obtains in *nævi materni*; the action of the small vessels of which those tumours are composed, would not be discriminated by the touch in their natural state, yet by some enlargement, and free communication in common receptacles or cells, pulsation becomes strongly revealed.

CASE VI.—*Amputation—Venous Hæmorrhage*.—A man was received into the Baltimore Alms-house, October, 1830, with chronic inflammation, swelling, and suppuration of the left knee-joint. The local affection resisted all treatment, topical and general, a deep sloughy fistula, communicating with the articular cavity, opened above the inner hamstring; symptomatic fever was urgent and unremitting, diarrhoea supervened, and the patient fell rapidly toward a crisis of perilous lowness. In this state of things amputation was the only resort. The limb was separated as low down as the condition of parts permitted. The weakness of the patient rendered it important to save his blood as much as possible, so that after dividing the bone, every artery was sought for and tied before the tourniquet was relaxed. When, after securing all the arteries that could be found, the tourniquet was loosed sufficient to show pulsation at the loops of the ligatures, not a single artery was sprung, nor a jet of florid blood visible, but a sudden gush of black blood from the great vein, rendered it necessary instantly to draw the tourniquet close.

An attempt was then made to discover whether such compression as the stump might bear in dressing would be sufficient to command the flow through the vein. For this purpose the soft parts were comprehended in both hands, and very firmly braced around the bone, after which the tourniquet was again cautiously loosed. The moment the ligature on the artery was observed to feel the returning current, the blood of the vein spouted in full stream to the distance of four or five inches from the face of the stump, unchecked by the closest grasp which could be made by the hands. It was now evident that ligature of the vein was indispensable. Its extremity was carefully insulated from every thing around, drawn out and tied. On now loosening the tourniquet, it was found that the hæmorrhagic disposition was assumed by all the secondary veins. Not one, but eight or ten streams of venous blood were projected to the distance of four or five inches, and in defiance of all compression, short of the tourniquet, continued to maintain their full projectile currents. Aware that *partial* compression by the band around the limb favours venous hæmorrhage, the tourniquet was thrown for a moment completely free, the limb raised vertically, and firmly grasped around the stump. Nothing was gained; the rush from the veins was undiminished and continuous, precisely as from arteries. It finally became necessary to apply ligatures to every vein of any size in the stump. In this manner eleven veins were tied up. We were for many days far from unconcerned about the possible consequences of the measure to which we had been forced, but the case went on without a single bad symptom which we could refer to the ligature of the veins. Owing to great exhaustion of the patient by symptomatic fever and diarrhœa contracted prior to operation, the parts about the stump did not cohere well, and a gleet supuration for some time kept the wound open—indisposed to heal, and finally involved exfoliation from the end of the bone; but there was at no time signs of phlebitis, local irritation, or constitutional disorder, in any manner different from what might have happened had no vein been tied.

This was the first occasion among numerous amputations in which I had found it necessary to treat veins as arteries, and, notwithstanding the apparent harmlessness of the practice in this instance, would never stop veins by ligature where it was possible to avoid their employment.

*Baltimore, August, 1831.*

ART. VIII. *Case of Traumatic Tetanus, successfully treated.* By  
ANTRIM FOULKE, M. D. of Montgomery County, Penn.

*To the Editor of the American Journal of the Medical Sciences.*

DEAR SIR,

My friend, Dr. Antrim Foulke, a most respectable and excellent physician, of Montgomery County, has communicated to me the particulars of a very interesting case of tetanus, which I saw with him during the convalescence of the patient, and which, from the circumstance of tetanus, from a wound, being very seldom cured, deserves to be recorded. You will oblige me by inserting it in the Journal.

Truly yours,

W. GIBSON.

Noah Snyder, aged twenty-four years, a robust and muscular man, of a sanguine temperament, on the 25th of July last received a wound in his leg from a cradling scythe, by which the posterior tibial artery was divided. The hæmorrhage was profuse and obstinate, but ultimately yielded to compression; and notwithstanding the prostration, which was in the first instance alarming, the patient did well, the wound healed kindly, and no untoward symptom appeared until August the 17th, when he was seized with unequivocal symptoms of tetanus, the spasms commencing in the injured extremity, and proceeding along the whole course of the spine and neck, producing a complete incurvation of the body. The jaws, though not entirely closed, were so rigid as barely to admit the introduction of a tea-spoon. The contortions of his face were truly horrible, and deglutition and articulation were effected with great difficulty.

I immediately administered a large tea-spoonful of laudanum, had the dressings removed from the wound, and ol. terebinth. applied, and frictions of the same to his spine. Opium, in combination with camphor, was given in large doses at short intervals during the night, which, together with the free administration of brandy, produced towards morning a considerable abatement in the violence of the spasms, and a state of comparative tranquillity. The medicines were continued, but in smaller doses, and at longer intervals. Towards the evening of this day, as the spasms recurred with their wonted violence and frequency, the same remedies which had been used the preceding evening were resorted to, and with a similar effect. He was then left under the almost uninterrupted influence of stimuli for the three succeeding days, but the spasms, though they at no period



during that time attained the same general and alarming violence, still continued to recur at longer or shorter intervals.

Finding that nothing had been, or seemed likely to be, effected by the stimulants alone, and dreading the state of exhaustion and collapse which such powerful and long-continued excitement must superinduce, I resolved to endeavour to break up the chain of morbid action, by making a new constitutional impression. Accordingly, on the fifth day from the first attack of the disease, I commenced giving him calomel, in conjunction with the remedies previously used, and continued it until a complete ptyalism was produced. This was not at first attended with any very manifest amendment of the symptoms, but in a few days, though the spasms continued to excite uneasiness and alarm, they were much reduced in violence, and were, for the most part, confined to the injured extremity. The patient continued in this situation for several days, when I commenced giving him assafœtida in substance, and in large quantities, which was promptly and unequivocally beneficial, for in four days from its first exhibition the disease was entirely removed.

Although I believe the most active and vigorous use of stimulants to have been entirely indispensable, as auxiliaries in the treatment of this case, yet I am persuaded that the breaking up of the morbid condition is clearly attributable to the agency of the mercury. The prompt and effectual influence of the assafœtida, in the latter stages of this case, leads me to entertain a high opinion of its antispasmodic virtues when administered in very large doses.

*Montgomery County, Pa. Sept. 1831.*

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ART. IX. *Observations on the Modus Medendi of Emetics.* By  
ROBERT J. TURNBULL, M. D. of Charleston, S. C.

WE do not seriously indulge the hope, that there is much on the subject of emetics possessing the charm of novelty which has hitherto escaped the research of the profession. The extent of our present design, is rather to revive certain principles connected with the operation of emetics upon the human system, which, though acknowledged by all as among the most fundamental of the healing art, are too often lost sight of by the regular routine practitioner—together with certain deviations from the ordinary mode of reasoning on this class of medicines, which, if possessed of no other merit, will at least be entitled to the claim of originality.

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We cannot, however, but flatter ourselves, that a more extended view of the phenomena which evince themselves upon the exhibition of emetic substances, will conduce much to arrest the progress of diseases of associated action, which ought, and can only be counteracted by agents of equally associated effects upon the system. Fever, a disease universal in its operation upon the system, implicating every organ, every tissue, and every system of vessels, is only to be subdued by remedial agents equally universal in their effects; and in searching the *materia medica* for a class of medicines capable of accomplishing these indications, none presents such claims to our consideration as the various emetic substances, distributed through the vegetable and animal kingdoms. In combating fevers successfully, the practitioner must pass over the less important and primary action of emetics, to wit, the ejection of the vitiated contents of the stomach, and base all his hopes of success upon those *secondary* effects upon the system, brought about by the depressed condition of the heart and arteries, dependant upon that inexplicable bond of union between distant parts of the system, denominated *sympathy*, and by which depressed condition of the circulatory organs we effectually controul inordinate action in any and every part, whether manifested in the form of simple excitement, or intense inflammatory action.

However, to one conversant with the high encomiums passed upon this class of medicines by the various authorities of the *materia medica*, it cannot but be evident that the practice of the present day is not based upon those salutary principles, viz. the *secondary action* of emetics, which characterized the practice of the practitioners of the past generation—that a revolution has obtained in the therapeutics of disease which has substituted a mode of treatment widely differing from that of our predecessors—and that the secondary effects of emetics have not only been lost sight of, but that the class of cathartic medicines have in a great measure superseded the use of emetics. It is not, however, a little singular, that the practice and theory of the day should be at variance. While our text-books teem with recitals of the wholesome and salutary effects of emetics, acknowledge their varied and extensive operation on the system, justly commend them as primary agents in combating the numerous diseases “that flesh is heir to;” still, by a strange inconsistency, they are much neglected, not unfrequently condemned on account of some hypothetical consideration, and when prescribed, it is usually with views so limited, as in a great measure to render them, if not nugatory, certainly of extremely limited advantage.

Though the writers of the *materia medica* have ably portrayed the *primary* and *secondary effects* of emetic substances when acting upon the human system, he who has concentrated his observation upon the practice of the profession relative to the employment of emetics, will readily perceive the necessity of conceding, that they have in a great number of diseases been rejected as dangerous, and even when acknowledged as legitimate resources of the art, have, in a majority of cases, been resorted to with the most limited views, simply prescribed as an evacuant of a stomach morbidly oppressed with accumulated ingesta or vitiated secretions, at once losing sight of those various *secondary phenomena* which invariably supervene upon the introduction of emetic substances into the stomach. Such is the extent of sympathy which exists between this organ and all other parts of the animal machine, that this viscus has, with no less propriety than beauty of expression, been termed the *centre of sympathies*. To attempt fully to trace the causes of this bond of union between the remotest parts of the system, might be involving ourselves in a labyrinth of *cause* and *effect* too intricate to engage the attention at present; suffice it, that we now only advance a theory, which, though deemed inadequate to explain this singular and extensive connexion of the various remote parts of the system, may be a mean of leading other minds to a more thorough investigation of a fact thus far deeply involved in obscurity.

In treating this subject we shall divide the numerous sympathies which manifest themselves, into *direct*, and *indirect*. *Direct sympathy* is that which exists between the *heart* and *stomach*, and we shall denominate it the *gastro-cardiac sympathy*.

To give any plausible conjecture of this connexion between these two important organs—the centres of the circulatory and digestive systems, it will be necessary to resort to another fact, which, though somewhat hypothetical, nevertheless carries with it so much probability, that we think it will be conceded by all.

We would maintain, that every organ, for the performance of its healthy functions, is dependent upon the *brain* for a certain portion of nervous fluid, *vis nervea*, by virtue of which it performs its ordinary functions.

It is well known, that inordinate muscular action, to accomplish which the muscles must be constantly supplied with nervous energy, greatly impedes the digestive process. Great mental exertion, by withholding that *vis nervea*, which is essential to the various organs for the performance of their respective functions,



and concentrating it for purposes of great mental action, necessarily impairs these organs, thus robbed of their due proportion of this essential fluid. Great mental emotion, such as grief, fear, joy, all exert an injurious tendency upon the other organs of the system, by concentrating this fluid in the brain. To this abstraction of the *vis nervea* by the cerebral mass from the other viscera, may be referred the whole catalogue of diseases incident to persons of sedentary habits. The stomach, and in short, the whole digestive apparatus being thus extraordinarily robbed of its *primum mobile*, viz. the *vis nervea*, is still called upon to perform its ordinary avocations in the ordinary manner; that it should not promptly respond to this unreasonable demand, is not singular; that it should consequently perform its functions in an irregular manner, first, by functional derangement of the *primæ viæ*, as evinced by acidity, flatulence, cardialgia, &c. and ~~after~~ by chronic, gastric and hepatic inflammation, is the natural consequence of the abstraction of this fluid; thus clearly proving that the health of the individual ultimately depends upon a regular and just distribution of nervous energy to the various organs of the body.

Now, by a resort to the old and just maxim of “ubi irritatio, ibi fluxus,” may we at once give some plausible conjecture as to the various phenomena which are manifested in the circulatory system, when an emetic substance is presented to the stomach. By an acknowledged law of the animal economy, every organ is endowed with the power of instituting certain processes, tending to avert any causes which threaten the interruption of the performance of its functions. The sensitive fibres of the iris immediately contracts to protect the delicate retina from an intense light, which by over-stimulation would produce organic derangement in this delicate tissue. The intestines, by virtue of the same sanative principle inherent in them, by an increased peristaltic action hurry along the tract of the alimentary canal any substance incompatible with its ordinary and healthy action, and thus it is that the stomach when oppressed by the presence of an emetic substance, would appear, when about to collect its energies, to call upon the neighbouring organs to lend their aid for the ejection of the offending matters. By the immediate response of the various organs, there is concentrated in this viscus an unusual degree of nervous power, to the abstraction of it from every other part of the system. The heart, thus deprived of its ordinary quantity of nervous energy, and feeling the want of that portion which has been determined to the emetic oppressed stomach, necessarily performs its functions in an enfeebled manner, and a corresponding en-

feeble systole and diastole is the result, as evinced by the paleness of the countenance, indicative of diminished action in the capillary vessels of the face, and as rendered more evident by an examination of the circulatory system, through the medium of a soft, feeble, or frequent pulse, &c. which facts we think unequivocally establish the existence of that *direct* sympathy between the stomach and heart, which we above termed *the gastro-cardiac sympathy*. And it is by the intervention of this *one direct sympathy*, that we account for all those phenomena which are presented to our observation under the term sympathies; numerous indeed, by virtue of that unlimited connexion which exists between the heart and every part of the animal machine. As there is no organ whose inmost recesses are not momentarily subjected to the vivifying influence of the contents of the heart and arteries, it will be apparent to the most casual observer, that in the exact ratio that we can controul the action of these, we shall produce corresponding changes in every portion of the system; and thus do we illustrate those various phenomena which have obtained the various appellations of gastro-cutaneous, gastro-cerebral, gastro-hepatic, and gastro-pulmonic sympathies, as also innumerable others, which might be multiplied *ad infinitum*—certainly to as many as there are parts in the animal machine. They might justly be enumerated from the most important organs to the *ultimate fibre* which enters into the most delicate structure. To enumerate the most conspicuous of these, will, we feel assured, be productive of giving liberal and salutary views in the exhibition of emetics, which cannot fail to render our practice more successful, and, at the same time, confirm the confidence which our *text books* repose in this valuable class of medicines.

In pursuing our inquiries relative to *indirect sympathy*, the first that presents itself to our consideration is that which exists between the stomach and brain, under the title of the gastro-cerebral sympathy. This connexion between these important organs is made apparent to our senses by the syncope which supervenes upon extreme nausea, dependant upon an enfeebled, or perhaps a *suspension* of the capillary circulation within the cerebral mass, and this again dependant and enfeebled action of the heart, enfeebled by an undue determination of nervous fluid to the emetic oppressed stomach. It ought here to be remarked that these sympathies are reciprocal, the stomach being as often affected by impressions made upon the brain and the nerves derived from thence; the infliction of a blow upon the cranium, certain impressions made upon the olfactory nerves by dis-

agreeable odours, the abstraction of blood, all exert an influence upon the stomach.

Ever to have an attentive eye to this sympathetic connexion cannot but conduce highly to our success, when called to encounter inflammation in this important organ, whether proceeding from disorganization of its substance or its delicate meninges, or whether the result of simple excitement dependant upon increased vascular action. To controul inordinate action in this important organ, the earliest resort should be made to the use of emetics, after a copious evacuation of the circulatory system by the lancet, thus maintaining the advantage derived from the use of this instrument without further debilitating the patient by copious and repeated draughts upon the vital fluid.

Of the existence of many other sympathies between the stomach and other organs, there exists most ample testimony. These have received appellations indicative of the various organs which they connect, as for instance, the *gastro-renal*, the *utero-gastric*, the *cysto-gastric*, &c. all evincing themselves under certain circumstances, such as the irritation dependant upon urinary calculi in the bladder or ureters, the uterine contents during the period of gestation, the accumulation of urine in the bladder, all of which exert an influence over the stomach, inducing all the symptoms of gastric irritation, varying from the slightest nausea to the fullest vomition.

After having thus pointed out the *universal sympathy* which exists between the stomach and every other part of the system, may we not ask what organ is diseased, in which symptoms of *preternatural action* are manifested, and emetics not imperiously demanded? If, as pathologists teach, *inflammation is seated in the capillary system of vessels*, then are emetics, by virtue of their peculiar sedative action upon these vessels, controlling both the velocity and quantity of the circulating mass within them, one of our most powerful antiphlogistic agents. The heart no sooner perceives that a portion of its ordinary nervous energy has been abstracted, than enfeebled systole supervenes. An enfeebled contraction of this organ necessarily involves the supposition of diminished action of the whole arterial system; those recesses which are most remote from the centre of the circulation first feel the absence of its ordinary stimulus, and diminished action in these parts, before preternaturally excited, is the consequence.

That such diminished action of the *capillary system* of the *internal organs* does take place, we infer from the phenomena presented to us by those which are *external*. The pale and shrivelled countenance,



dependant upon diminished action of the capillary vessels of the face, occurring synchronously, and even before the supervention of nausea, forcibly teaches us that an analogous condition must obtain throughout the system, in the internal as well as the external organs.

Of the sedative effects of emetics upon the capillary system, there exists other testimony than our own observations. Experimentalists have ascertained, that in the exact ratio of the emetic substance being urged upon the stomach, is the degree of the diminished action extended; retrograding from the capillary system to the next sized set of vessels, and again to those of a still larger diameter, until eventually in the smaller animals it has extended itself by this retrograde movement to the heart itself, whose action it has eventually extinguished.

Thus deprived of the vivifying influence of the blood and with it a certain portion of the *vis nervea*, which gives to the diseased organ a morbidly tonic condition, a universal relaxation pervades the system, eliciting the organs thus affected to pour out their locked up secretions.

Such then are the additional views, which ought to occupy the mind of the physician when prescribing emetic substances. In all diseases of associated action, it is to their effects upon those organs embraced in the term *secundæ viæ*, that we must look for success. In the *idiopathic pyrexia*, by virtue of their universal relaxant property, they become one of our chief agents in arresting the progress of this class of diseases. In fever, dependant upon inflammation, or some other irregularity of the capillary system of vessels, which may be said to constitute the parenchyma of an organ; the exhibition of an emetic stands second only to the use of the lancet. As there cannot exist great local determination, without a corresponding accumulation of nervous energy in a part, the beneficial effect of an emetic will be strikingly observable in the fact, that having diminished the quantity of vital fluid circulating within the part, an abstraction of a portion of the morbidly accumulated *vis nervea* is the result, and relief from local pain is a further consequence.

When thus dwelling upon the *secondary action* of emetics, we would not wish to have it understood that we in any degree wish to invalidate the confidence which is justly reposed in this valuable class of medicines, even when prescribed with a view to their *primary action* upon the system, viz. for the ejection of accumulated ingestion or vitiated secretions, preparatory to the exhibition of other medicines, designed to operate upon the alimentary canal. Such preparation being sometimes absolutely necessary, owing to a preternatural irri-

tability of the stomach. The advantages of relieving a stomach thus oppressed, are too evident to require comment here. None feel the advantages to be derived from the *primary action* of emetics upon the alimentary canal and collatitious viscera, more than ourselves.

As cathartic agents, this class of medicines present urgent claims upon the attention of the profession. They exert a twofold operation upon the system. Independent of their stimulant operation upon the alimentary tube, producing copious discharges of feculent matter, highly coloured with the hepatic secretion, first *elicited* by the universal relaxation of the system, and after *extorted* from the liver by the combined pressure of the diaphragm and abdominal muscles, during the act of vomiting. A portion of this bile, escaping into the duodenum, and thus being out of the reach of the inverted action of the stomach, passes through the whole tract of the alimentary canal producing its peculiar cathartic action. Independent of this highly remedial operation upon the alimentary canal and collatitious viscera, antimonials managed as cathartics, presents other and higher claims to the consideration of the profession, which ought to give them a decided preference when prescribed in febrile diseases. We again allude to their *secondary operation* upon the system, to wit, their *controul of the action of the heart and arteries*; this while it effects the primary object of alvine evacuation, subdues inordinate action in every part; whether it be in the encephalon, as evinced by head-ache, intolerance of light, or in the suffused and muddy appearance of the eyes; whether in the pulmonary organs, as declared by cough, stricture, or limited respiration; whether the inflammation be seated in the parenchyma of the liver or in the serous tissues investing it; in short, by virtue of diminished cardiac, arterial, and consequent venous action, in whatever part of the system, however remote, or inordinate it may exist, it cannot fail immediately to experience the sedative effects of antimonial emetics, administered with the double view of producing their emetic and cathartic operation.

We shall now cursorily glance at one or two diseases, in which emetics may be administered with great advantage, but more especially with a view to their *modus medendi* in these complaints.

If, as we believe, dropsy be dependant more frequently upon *inordinate capillary action*, resulting in the deposit of serous secretion, rather than upon diminished action of the absorbent system of vessels, then would our views of controlling the circulation within these vessels, through the medium of the gastro-cardiac sympathy, prove most applicable. The exhibition of emetics in this disease, will, however, much depend upon the condition of the pulse. As desirous as we

are for a more general use of antimonials, upon more extensive views, we cannot subscribe to the position that, as they *promote absorption*, that they are therefore appropriate in all forms of this complaint. It is only in those cases in which there is observable an acceleration of pulse, not amounting to fever, that we deem them admissible. In a contrary condition of the arterial system, as when the disease supervenes upon old and worn out constitutions, as indicated by a feeble and frequent pulse, it is evident that an emetic cannot otherwise than depress a system, already requiring artificial support. It is not necessary that this excitement be manifested by the pulse. *Inordinate capillary arterial action and consequent serous effusion* may exist without involving the circulation in the larger system of vessels.

These opinions have been adopted, because we think that observation has taught us that the absorption and discharge of the fluid collected in the peritoneal cavity, is never effected until such time as the hydragogue medicines resorted to, have, by their evacuant operation, subdued that *excited* condition of the pulse, upon which the disease, in a majority of cases, essentially depends. By the profuse serous evacuations, and a consequent diminution of the circulating mass within the *exhalent arteries* of the intestines, a revulsion is produced, and the tide of the circulation is reversed. Instead of a preternatural afflux to the capillaries of the peritoneum, it now flows to the capillaries of the mucous membrane of the intestines, which in obedience to the stimulant operation of medicine, pour out their serous contents, thus substituting an artificial excitement of the capillaries of a mucous, for the more dangerous inflammatory condition of those of a serous membrane. Such, do we believe, is the *modus medendi* of ordinary hydragogues. To their evacuant or depleting powers, do we attribute the beneficial results consequent upon their exhibition.

If the above reasoning be correct, we feel confident that an antimonial cathartic would be decidedly preferable to all other cathartics, by virtue of its twofold operation upon the system. It promises to answer the double indication of producing revulsion of the circulation, by the profuse serous evacuations which are consequent to its exhibition, as also to controul the circulation within the peritoneal capillaries by virtue of its *sedative* action upon the *heart* and *arteries*, thus obviating that condition in this system of vessels, upon which we have supposed the serous deposit to depend. To this artificial inequilibrium of the circulation of the arterial and absorbent systems, brought about by the diminished action of the former, do we refer the *apparent direct stimulant effects* of the latter. Emetics do not



promote absorption, by directly stimulating this system of vessels, but rather accomplish the removal of effused fluid, by *arresting* its secretion—by controlling the circulation within the diseased capillaries of the parts affected.

An investigation into the pathology of dysentery, in the highest degree corroborates the use of emetics; all the symptoms declaring the existence of *intestinal inflammation*, and *consequent spasmodic constriction*. Of the various theories which have been promulgated as to the pathology of this disease, each may be made to countenance the above pathological exposition. Whatever theory, therefore, we may adopt, we can substantiate the utility and *modus medendi* of emetics. If with SYDENHAM, we believe it to be the result of checked cutaneous transpiration; if with CÆLIUS AURELIANUS, AKENSIDE, STOLL and RICHTER, we admit it to be a rheumatic affection of the digestive tube; if with CULLEN, we believe it to be a catarrh of the intestines; if we believe it to consist in spasm of the colon, the *colitis* of BALLINGATE, whichever of these opinions we adopt, the principal indications are, *to relieve spasmodic constriction, to determine to the surface, and to take off local inflammation by controlling the capillary circulation*. In accomplishing these indications, a knowledge of the *secondary operation* of emetics becomes of the highest importance. Of these various theories, we believe that which makes the disease to consist in *inflammation*, and *consequent spasm* of the intestinal tube, to be most in accordance with the truth. To obviate this morbid condition of the intestines, the relaxant properties of emetics promise much. Their *sedative action* upon the capillary system of vessels, controlling the circulation within the inflamed parts and the relaxation which must always be a concomitant of the abstraction of blood from the capillaries of the inflamed part, conspire to give them claims to the utmost confidence. Spasm must be considered, in a large majority of cases, as dependant upon an accumulation of nervous energy in a part. In whatever part an accumulation of the vital fluid occurs, a preternatural accumulation of the *vis nervea* is the natural consequence. To take off this preternatural determination of the circulatory and nervous fluids, by creating an artificial *centre of irritation*, is the principal object in exhibiting an emetic in dysentery. With their *primary action*, viz. the ejection of contents of the stomach, we have little to do; their *modus medendi* is to be sought for in their *sedative action upon the capillary system of vessels* induced by the determination of the circulatory and nervous fluids to the emetic oppressed stomach.

From what has already been said, we feel that we may have been,

anticipated in extending their use to all the remaining phlegmasiæ. In all inflammations of the serous membranes they exert a most remedial influence, by virtue of their sedative action upon the extreme vessels, and the more delicate the system of vessels, the greater power they appear to exert. Their highly remedial influence in ophthalmia and erysipelas, in which diseases the vessels of the most delicate tissues of the system are affected, viz. the conjunctiva and the skin, are corroborative of the assertion.

We are not ignorant that erysipelas has been thought by the eminent DESAULT to be dependant upon derangement of the biliary system, and its cure essentially connected with the copious evacuations of bile, incident to the exhibition of an emetic. We differ, in toto, from this justly celebrated authority. We should be inclined to refer the preternatural secretion and consequent vitiation of the hepatic secretion, to some morbid condition of the *capillary* vessels of the liver and general system, rather than view the vitiated secretion as the *cause* of the primary derangement, and it is to the peculiar action which emetics exerts upon this system of minute vessels, that we are to look for the solution of their *modus medendi*. If the morbid action consists in spasm and inflammation of these vessels, then we should point to the use of emetics as the most efficient means of producing universal relaxation, and consequent diminution of arterial capillary action.

Enough has been said to induce the practitioner to extend the use of emetics to all the remaining phlegmasiæ. In enteritis, peritonitis, cynanche trachealis, cynanche laryngea, and cynanche maligna, the most formidable of all anginose diseases, the use of emetics are indispensable. In all inflammations affecting the denser membranes, they become the most powerful auxiliaries of the lancet, but it is principally in the latter disease that their remedial agency is most conspicuous. The rapidity with which the inflammation extends itself, and its proneness to pass into a state of mortification, imperiously demands that we resort to the use of emetics, whose action seems particularly directed against the inflammatory condition of the capillaries of the mucous membrane lining the throat, whose excessive action and consequent mortification constitutes the danger of this truly formidable disease.

That a prompt resort, and a repeated use of the lancet will accomplish most of the indications for which we have recommended the use of emetics, is a fact which would seem to invalidate the importance which we have endeavoured to attach to this class of medicines in treating the phlegmasia, if not otherwise explained. That the

lancet is a direct sedative to the capillary system of vessels, by emptying the larger vessels of their contents, and thus creating a determination to these, which is effected at the *expense* of the capillary system, is generally admitted; and it would appear that a repetition of its use would effect the very indication for which we prescribe our emetic, viz. to controul the circulation within the capillary system, which, if it does not constitute, certainly is favourable to the existence of inflammation. We do not wish for a moment to countenance the idea that we reject the use of the lancet. We rather resort to emetics as its most powerful auxiliary, and as instrumental in *protracting* that condition of the capillary circulation induced by the use of the lancet, without effecting an excessive expenditure of the vital fluid, which favours serous effusion, an evil which is also to be avoided. Though the lancet produces a change in the circulation, in which the tide sets from the seat of inflammation, viz. the extreme vessels to those of larger diameter, the system soon establishes an equilibrium, and the seat of irritation again becomes a point to which the circulation is attracted, until a repetition of its use again produces a revulsion. To avoid this excessive expenditure of the vital fluid, we prescribe emetics, which effectually controul without diminishing the quantity of the circulating mass, already so much reduced as to render its further abstraction liable to be attended with dangerous consequences.

With this exposition of our views of the pathology of dropsy, we pass on to say a few words to reconcile the great discrepancy which pervades the profession relative to the use of emetics in apoplexy. The weight of authority, we are well aware, is against their use, and the acknowledged pathology of the disease, which makes it to consist in a congested state of the cerebral vessels, would appear to give additional weight to the objecting party. A reference, however, to the phenomena which invariably obtain previous to the act of emesis, will in a great degree, invalidate the reasonings of those who oppose their use. The pale and shrivelled countenance, the frequent, feeble, and irregular pulse, the diminished capillary circulation, indicated by the paleness of the general surface, all tend to prove the fallacy of an assertion, based upon high authority, viz. that emetics “have a direct tendency to increase the fulness of these vessels, (cerebral,) by increasing the arterial and retarding the venous circulation.” Now we rather think that it is susceptible of proof, that directly the reverse of this obtains. Previous to the act of vomition, there always exists a diminished action in the vessels of these systems by which both the velocity and quantity of the circulating mass is materially



diminished in the cerebral vessels. To the *sedative* action of an emetic upon the heart and arteries and other circulatory organs, are we to look for the fact which can alone reconcile the discrepancy of opinion relative to the use of emetics in apoplexy. By virtue of the sympathy which exists between the stomach and heart, resulting in a diminished action of the latter, the afflux of blood to the head, is so much diminished as in a great measure to preclude the possibility of danger during the short period of emesis by preventing the free return of the circulatory mass through the venous channels. It is, then, by a reference to the sedative effects of emetics, previously to the act of vomiting, thereby controlling the cerebral circulation, that we think ourselves justified in recommending the exhibition of this class of medicines as legitimate resources of the art in treating apoplexy.

A few words upon the diaphoretic properties of antimonials we hope will not be deemed superfluous. In accomplishing this important indication, antimonials are singularly efficacious. By the universal relaxation which pervades the system when under nausea, relieving the morbidly constricted vessels of the surface, thus *eliciting* the natural cutaneous transpiration; by the moisture and even profuse perspiration which bedews the forehead, and even whole body, of the patient, when in the act of vomiting, whose natural secretions have just before been locked up by febrile action; by the softness and coolness of the skin consequent to these attempts at vomiting; by these and other considerations, we should be disposed to give antimonials a decided preference, as diaphoretics, over that class of stimulant medicines, which, by increasing the circulation, *extorts* perspiration from the constricted capillaries of the surface. In the exhibition of the former, the *spasm* of these vessels is first subdued by the relaxation incident to nausea, before the attempt at vomiting, by increasing the circulation, force but cutaneous transpiration, thus removing all those fears which might justly be entertained when prescribing those stimulant medicines which break up spasm, without previously relieving the morbidly tonic condition of the cutaneous capillary system.

As expectorants, the value of antimonial emetics are too generally acknowledged to require comment here, we shall, therefore, content ourselves with saying a few words upon their *modus medendi*.

Directly stimulant to the stomach, and thus concentrating nervous energy in this viscus, an emetic becomes indirectly a powerful sedative to the rest of the system. By the intervention of the diminished action of the heart, a corresponding change is produced in the capillaries, ramifying upon the mucous membrane of the bronchian parenchyma of the lungs. A diminished action in these ves-

proximation to their natural and healthy condition, and mucous secretion is the result in a system of vessels whose action before was suspended or performed in a limited manner, owing to capillary spasm. To this *indirect sedative* power of emetics must be attributed the protean action of this class of medicines. As sialagogues, by relaxing the salivary glands to that degree as to incapacitate them for the retention of their peculiar fluids. As emmenagogues, by relaxing the uterine capillaries, the morbidly tonic condition of which may frequently be regarded as the cause of the non-appearance of their peculiar secretion. As narcotics, by controlling inordinate arterial action, which favours the accumulation of nervous energy in important organs, and especially in the brain, upon which that distress and anxiety peculiar to intense febrile action is dependant. As the system has approximated the natural and healthy condition, by the equalizing action of an emetic, or rather by its power of determining nervous energy from the oppressed organ to the stomach, we have witnessed corresponding changes in the feelings of the patient, varying from mental and corporeal tranquillity to profound natural sleep.

It now only remains for us to say something upon the mode of administering emetics, by which the greatest advantages are to be gained; the ordinary manner of administering them being deficient in that principle of gentle, repeated, and protracted emesis, upon which success must chiefly depend. We believe that it will be in unison with the facts, when we assert that the usual mode of administering an emetic at the present day, is by exhibiting four or five grains, in portions of three-fourths of a grain to a grain, at intervals of from ten to fifteen minutes, until such time as the act of vomiting be induced, aiding and accelerating its operation by copious draughts of tepid water, or a weak infusion of chamomile flowers. By the solvent powers of the former, and the emetic qualities of the latter, every portion of the original emetic substance is ejected from the stomach; thus interrupting its cathartic operation, to induce which, it is necessary that a portion of the emetic should pass the pyloric orifice of the stomach, and be introduced into the alimentary canal. Nor is the loss of its cathartic operation the only objection which can be urged against this mode of administering emetics. Administered as above, their effects are too *evanescent* to derive the advantages which ought to result from a more judicious administration of them; the system not being under their effects longer than from three-fourths of an hour to an hour and a half. Even when resorted to for this short period, no one has failed to observe their remedial effects; a softer reëstablishment of the cutaneous transpiration, and a more

tranquil condition of the patient, are the usual results of their administration. But, as we observed, when thus administered, the beneficial effects are evanescent, the speedy withdrawal of the emetic, producing these changes, necessarily favours the reëstablishment of febrile action. We know of no therapeutic principle more allied to truth, than that upon which we have always practiced in diseases of associated action, viz. that it is by *repeated impressions* upon the circulatory system through the intervention of the *gastro-cardiac* sympathy, that we must hope to break through the chain of morbid associations, constituting febrile diseases.

Gutta cavat lapidem, non vi, sed sæpè cadendo.

It is by a steady perseverance in the use of emetics given in minute doses of half a grain at intervals of half an hour, that the system will be kept so long under their sedative effects, as most effectually to trammel the disease, and thus offer an obstacle to its further progress by association. By the use of emetics, the system is brought into a condition directly opposite to that of febrile action; and it is only by protracting this state of things, viz. by keeping up *continued* but *moderate pressure* upon the *arterial system* by the sedative effects of an emetic, that we can dissolve the chain of morbid actions. An attentive observation of the phenomena which develop themselves, while the system is under the effect of an emetic, will convince us of the necessity of protracting the emetic action. In the exhibition, no very sensible effects are produced by the first three or four half grains. A well-directed observation would, however, detect certain changes which would escape the eye of one not fully skilled in the exhibition of emetics. The pulse assumes a softer and more frequent action, there is less cerebral excitability, and general corporeal composure; nausea now supervenes, and with it universal relaxation, succeeded by attempts at vomiting, which accomplished, a universal relaxation pervades the cutaneous capillaries, and a corresponding quantity of perspirable fluid is the result. This approximation to the healthy standard is of short duration; as the effects of the emetic pass off, febrile action again reëstablishes itself, until the lapse of the half hour brings with it another half grain, which never fails to produce even greater relief, each interval of febrile action being of greater duration, until the disease thus checked from time to time, by the obstacles which it encounters in the *sedative action* of the emetic, is so trammelled in its progress, as eventually to be forced to yield. When we contrast this practice with that which now obtains, we think its advantages must be apparent to the most casual observation. In protracting the emetic action by the exhibition of minute doses at



proper intervals, we interpose our second dose just at a time when all the advantages derived from the emetic substances are about to wear off, and febrile action again begins to establish itself; at this critical moment we place our *veto* upon its further progress by a repetition of the dose. In the ordinary mode of administering emetics, all the advantages gained by their exhibition are lost by a discontinuance of them. Though the disease be partially subdued in the absence of the emetic, it gains sufficient strength again to become formidable. Though a victory is gained, all the advantages which might result from a pursuit and total rout of the enemy are slothfully abandoned.

To some of the profession, the practice of protracting the emetic action may be fraught with many and great evils, as tending to induce an irritable condition of the stomach, not a little to be dreaded. Such fears may be calmed by the fact, that when administered in the above small doses, we have never known them to have such an effect. This will be the more easily credible, when we assert that it is never necessary to administer more than from four to six grains before the *criterion* which induces its discontinuance supervenes. One or two copious alvine evacuations have always been our signal for its discontinuance. Such then are the additional views based upon the *secondary action of emetics* which we proposed to give, and upon which has been based a practice singularly successful in diseases of associated action.

*New York, August, 1831.*

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ART. X. *Report of the Committee of the Board of Health of Charleston, respecting the Prevalence of Varioloid and Small-pox in that city during the year 1829.*

THE Committee of the Board of Health, appointed to report upon the prevalence of varioloid and small-pox during the last year, and for other purposes, respectfully *Report,*

That, to accomplish the duties assigned them satisfactorily, they sent the following Circular to the Physicians of Charleston:—

*Charleston, Nov. 25th, 1830.*

DEAR SIR,

Having been appointed a Committee of the Board of Health, to ascertain how far the varioloid and small-pox have prevailed; &c. &c. we respectfully, (in order to accomplish satisfactorily the intentions of the Board,) present for

your consideration the following interrogations, and earnestly request a reply as soon as possible.

*Query 1st.* Have you seen any cases of small-pox, and how many during the last year?

*2d.* Have all the symptoms and stages of small-pox been exhibited in any of your patients who have been vaccinated?

*3d.* Have you had any cases of varioloid, and how many?

*4th.* How do you distinguish varioloid from small-pox, and how from varicella or chicken-pox?

*5th.* Have you ever known varioloid to occur among those who had the natural, or been inoculated with small-pox, or have you ever seen varioloid in those persons who have been protected neither by inoculation from small-pox or vaccine?

*6th.* Have any of your patients with varioloid at any time of your practice, (stating the length of time you have practised,) died?

*7th.* Do you regard varioloid as a distinct disease, or as modified small-pox?

*8th.* Has your confidence in the protective power of the vaccine been lessened?

*9th.* Do you think that the careless manner in which persons are vaccinated by those who are not physicians, and are incapable of judging, ought to be considered a great evil, and a source calculated to lessen confidence in a valuable preventive of small-pox?

*10th.* During your experience have you not found it a common custom for persons not physicians to vaccinate their domestics and families, to save the expense of getting a physician?

*11th.* Do you not think that taking so much matter, as is usually the custom, from a pustule when there is only one, lessens the chance of a constitutional impression being made; and that it would be better to leave one pustule uninjured, to go through all the stages?

*12th.* Do you think at any period of life the vaccine would become diminished in its power on the system to resist the influence of small-pox?

*13th.* How do you distinguish a spurious from a genuine vaccine pustule?

With due consideration, we are, respectfully,

THOMAS Y. SIMONS, M. D. <i>Chairman.</i>	} <i>Committee</i>	
J. MOTTE CAMPBELL, M. D.		} <i>of</i>
GEORGE LOGAN, M. D.		

Your Committee was prevented from giving an earlier report, in consequence of the medical gentlemen not having before sent answers to the above circular. They, however, now offer the following to the consideration of the Board. The Committee will first give a concise history of the small-pox epidemic; and secondly, offer the opinions which are entertained in Europe and America upon the value of vaccine as a means of controlling the ravages of small-pox.

In the performance of this important duty, they will be as concise as possible, avoiding the adoption of any speculative opinions, and

presenting only such views as seem derivable from actual experience and observation.

In February, 1830, the small-pox and varioloid first made their appearance; for a year or two previous, scarlatina, measles, and cymanche maligna, had prevailed, and for several years the small-pox had been at the Lazarettó, being imported cases. During the summer season, the small-pox and variola seemed to have disappeared, but, on the approach of winter, they again made their appearance.

The small-pox has assumed the various forms of confluent and distinct, and has been extremely severe in its type, and frequently fatal. The number of deaths, according to the records of the Board of Health, which does not include Charleston Neck, has been fifty-three.

Sometimes this disease, both in the confluent and distinct form, has gone through all the regular stadia with the pustules fully and properly developed, which your Committee deem unnecessary to describe. In others, however, the eruptions have assumed the appearance of measles; have, in the progress to filling and maturation, become flattened, being imperfectly filled with purulent matter, and, in their termination, they have dried up, forming no regular scabs, and showing beneath an inflamed, and in some instances a gangrenous aspect. In proportion with the imperfect development of the pustules, have there been great determination to, and inflammation of, the mucous tissues of the thorax and alimentary canal, and the tissues of the brain. This form has generally proved fatal. The varioloid, as it has been termed, was ushered in with great pain in the head and spine, accompanied frequently with delirium and gastro-intestinal irritation: on the fourth day an eruption appeared on the cutaneous surface, when the symptoms just described began to subside. This eruption has assumed a very irregular appearance—the papular, vesicular, and pustular, all in many cases existing at the same time; and on the sixth day after their appearance, in place of maturing with fever as in small-pox, they have desiccated, leaving red splotches, in a few instances depressions, but more frequently prominences. There have been some modifications of this—the disease partaking partly of the character just described, and partly of small-pox. Sometimes successive crops of eruptions have appeared in the course of the disease: varicella has likewise prevailed contemporaneously with small-pox and varioloid, but the fever has been, (previous to the eruption,) very mild, short, and irregular in its duration, and afterwards only vesicles have appeared, which were of a few days continuance. Your Committee, however, are persuaded that many cases



of varicella have been confounded with varioloid. Regarding the distinct characteristics of these two diseases, there has been great discrepancy of opinion among medical gentlemen here, as well as in other portions of the world. Your Committee will decline, on a subject so unsettled in medical opinion, attempting to make any other diagnostic of variola, varioloid, or varicella, than the description just given, remarking,

1st. That varioloid is regarded by some physicians as small-pox, modified by vaccine and inoculation of small-pox.

2d. That a few physicians consider it as a distinct disease.

3d. As secondary small-pox, similar to the diseases which medical writers, antecedent to the introduction of vaccine, described as horn-pock, nurses-pock, siliquose-pock, sheep-pock, bladder-pock, &c.

4th. It has been suggested, that only varicella and small-pox have prevailed, there being an intimate relation between these two diseases, and that which has been termed varioloid is varicella, modified and increased in virulence by the epidemic influence of small-pox, as remittent fevers are aggravated in their type during the prevalence of epidemic stranger's fever.

From the answers which have been received to the circular, it appears that varioloid occurred among the vaccinated, the variolated, (or those who have been inoculated with small-pox;) among a few who have had small-pox naturally, two of whom have died; and in a few instances in those who have been protected neither by natural or inoculated small-pox, or vaccination, similar phenomena have been noticed in the small-pox epidemics which have appeared elsewhere. Your Committee can give no adequate idea of the number of cases of small-pox or varioloid which have occurred, not having received answers from all the practitioners of our city; and of those who did return answers, but few kept a register of their cases; the proportion, therefore, of those who have died, with those who have been sick, cannot be ascertained. Your Committee, however, are satisfied that the proportion of deaths from varioloid, in comparison with the number that have been sick, has been small. According to the register of the Board of Health, there have been but eight deaths from varioloid. Some of these may justly be ascribed to the severity of our winter, producing violent concomitant catarrhal affections; and some cases which have been called varioloid, there is good reason to believe were small-pox.

The second point of consideration which your committee will bring to your view, are the opinions which are entertained in Europe and America of the value of vaccine as a means of controlling the

ravages of small-pox. And this is the more imperatively called for, from the distrust which has been awakened in the efficacy of vaccine, since the prevalence of varioloid. It has been already stated that varioloid has attacked those who have been inoculated with small-pox, those who have had the small-pox naturally, those who have been vaccinated, and those who have been altogether unprotected. These facts have been observed, not only in Charleston, but in other portions of the United States, and in different countries of Europe, where varioloid and small-pox have prevailed. Now it is true that the varioloid occurs more frequently among the vaccinated. But it must be recollected that by far the greater proportion of individuals in Europe and America are protected by vaccine, and hence, by parity of reasoning, where varioloid does prevail, the greater proportion of cases must be among the vaccinated. It may likewise be called to mind that antecedent to vaccination secondary small-pox was of frequent occurrence, and has been fully and satisfactorily described by the medical writers of those days, under various appellations, as nurses-pock, sheep-pock, siliquose-pock, &c. &c. &c.

With these prefatory remarks, your committee will offer you opinions derivable from the highest authorities, premising that the medical periodicals abound with confirmatory testimonials of the opinions which are now presented.

In 1805, in consequence of varioloid occurring after vaccination, and the distrust which was awakened in many as to its real value, the College of Physicians of London were instructed to investigate the subject and report. The following extracts from that report are offered:—

“Deeply impressed,” says that distinguished body, “with the importance of an inquiry which equally involves the lives of individuals, and the public prosperity, they have made every exertion to investigate the subject fully and impartially. In aid of the knowledge and experience of the members of their own body, they have applied, separately to each of the licentiates of the college; they have corresponded with the Colleges of Physicians of Dublin and Edinburgh, with the Colleges of Surgeons of London, Edinburgh, and Dublin; they have called upon the societies established for vaccination for an account of their practice, to what extent it has been carried on, and what has been the result of their experience, and they have, by public notice, invited individuals to contribute whatever information they had severally collected. They have, in consequence, been furnished with a mass of evidence, communicated with the greatest readiness and candour, which enables them to speak with confidence on all the principal points referred to them.”

After referring to the general use of, and confidence in, vaccination, the college goes on to state:—

“The security derived from vaccination against the small-pox, if not absolutely perfect, is as nearly so as can perhaps, be expected from any human discovery; for against several hundred thousand cases with the results of which the college have been made acquainted, the number of alleged failures has been surprisingly small. So much so as to form no reasonable objection to the general adoption of vaccination; for it appears that there are not nearly so many failures in a given number of vaccinated persons, as there are deaths in an equal number of persons inoculated for the small-pox. Nothing can more clearly demonstrate the superiority of vaccination over the inoculation of the small-pox, than this consideration; and it is a most important fact, which has been confirmed in the course of this inquiry, that in almost every case where the small-pox has succeeded vaccination, whether by inoculation or by casual infection, the disease has varied much from its ordinary course; it has neither been the same in violence nor in the duration of its symptoms, but has, with very few exceptions, been remarkably mild—as if the small-pox had been deprived, by the previous vaccination, of all its usual malignity.”

This strong confirmation of the value of vaccine, emanating from a learned body, deriving its sources of information from all the most learned medical bodies of Great Britain and Ireland, has been fully sustained by the subsequent experience and observations of physicians there, on the Continent of Europe, and in the United States of America. As this report is intended not for the information of medical gentlemen, whose readings upon this important topic it is presumed, has made them fully acquainted with medical opinion throughout the world, but for the citizens, whose confidence in vaccine has been in some degree shaken, your committee must ask indulgence when they offer accumulated testimony confirmatory of the opinion of the College of Physicians of London, during the last twenty-five years. Dr. THOMSON, in an able communication to Sir J. M'GREGOR, the director-general of the medical department of Great Britain, &c. relative to small-pox, varioloid, and varicella, as it prevailed in Scotland, derivable from his own experience and observation, and of some of the most respectable physicians of that country, makes the following remarks:—

“It has been impossible to see the general mildness of the varioloid epidemic in those who had undergone the process of vaccination, and the severity, malignity, and fatality of the same disease in the vaccinated, and not to be convinced of the great and salutary powers of cow-pock in modifying small-pox, in those who were afterwards affected with this disease. Proofs cannot be imagined more convincing and satisfactory of the incalculable benefits bestowed upon mankind by its discoverer, than those I have had the pleasure of witnessing. It has been very agreeable, also, to observe that the terrors at first excited by the occurrence of the varioloid epidemic in the families of those who had undergone cow-pock inoculation, have gradually given way in the progress of the disease; and that the comparison of small-pox in their modified forms has



often forced a conviction of the advantages of cow-pock inoculation upon the minds even of the most ignorant and prejudiced, and induced them to seek protection for themselves and their offspring in a practice which they had formerly neglected or despised."

A committee of the "Academie Royale," of Paris, make in the conclusion of their report, the following remarks:—

"It is evident that when the utmost concessions are made, when all the causes of small-pox after vaccination which have been reported are considered authentic, it would be sufficient to compare these rare occurrences with the innumerable cases of the disease in those who have not been vaccinated; and also with the immense number of those who have undergone the process, and been exposed to contagion with impunity, in order to be convinced that vaccine inoculation is one of the most beautiful and useful discoveries that has ever been made, and that this invaluable antidote still preserves its virtues."

In an interesting history of the variolous and varioloid epidemic, which prevailed in Philadelphia in 1823 and 1824, by Drs. MITCHELL and BELL, the following important statement is made, of two hundred and forty-eight cases of small-pox and varioloid, which came under their notice—one hundred and fifty-five were unprotected, of whom eighty-five died; sixty-four vaccinated, of whom one died; nine inoculated, of whom three died; seven previous small-pox, of whom three died; thirteen unknown—no deaths. Now, here is clearly shown the ravages which have occurred to the unprotected, there being eighty-five deaths, while of the vaccinated only one; of the inoculated and previous small-pox, each three, proving that the vaccine made a milder form than any other. If there were a greater proportion of vaccinated than those who were inoculated, or had previous small-pox, who had varioloid, it must be remembered that the proportion of vaccinated to the proportion of inoculated exposed to varioloid, must have been as at least four to one; add to this the danger and fatality resulting from inoculation, and the mildness and innocency of vaccine, and its value is strikingly illustrated. In the concluding observations of a Committee of the Philadelphia Society, appointed to report on the variolous and varioloid disease, which prevailed in Philadelphia, in 1827, the following language is used.

"Thus we may, without the least want of candour, come to the conclusion, that only one death from small-pox after vaccination had occurred during the year 1827, among eighty thousand vaccinated persons, and during the prevalence of a most malignant and mortal small-pox, while several individuals have lost their lives from small-pox after they had already gone once through the disease. It appears then clearly that vaccination ought to lose nothing of the public confidence, and as a protection from the fatal effects of genuine small-pox, it may safely be asserted, it is in every sense to be preferred to inoculation."

his latter opinion, your Committee most fully concur; and they are authorized to state, that such is the opinion of almost every physician in our city. It will now be proper to offer the opinions which have been advanced by Committees appointed by the Medical Society of South Carolina, and which were adopted and approved.

The Committee, in an interesting report upon the epidemic small-pox of 1817, as it existed in Charleston, state

That their confidence in the efficacy of the vaccine as a preventive of small-pox continues undiminished, and they think it the only means by which the ravages of that disease can be effectually put a stop to. Proofs of its efficacy are continually presented to our view. They surround us on all sides. Did it not destroy the susceptibility to small-pox, every house would become a hospital. Scarcely would there be a family but would have to mourn the loss of some favourite member by its destructive influence; indeed, what must have been the situation of our city for many months past, where so many thousands have relied on it exclusively."

Again, the Committee on the epidemic small-pox of 1824, declare that "vaccine inoculation, when properly and judiciously performed, still maintains the same confidence which has hitherto been reposed in it, as a protection against small-pox."

Having, from accumulated testimony, which your Committee collected from the periodical and other medical works which have been published since the introduction of vaccine, (and among which they have seen none that does not admit it as the safest and most valuable means of checking the ravages of small-pox,) presented to your notice evidences from the highest authority of its value; they will consider some of the questions which were proposed in the circular, in the first part of this report, some of them having been already noticed.

*1st Question 8th.* Has your confidence in the protective power of the vaccine been lessened? It has been answered by all, that although vaccine cannot be regarded as protecting from varioloid, it does, most generally, from small-pox after vaccination, and not one death; and in these few cases the vaccine was supposed to be genuine, only from the patient's having been vaccinated by physicians, and not from a personal knowledge of the cases, and that it is decidedly the most salutary means of checking the ravages of small-pox.

*Q. 9th.* Do you think that the careless manner in which persons are vaccinated by those who are not physicians, and are incapable of judging, ought to be considered a great evil and a source calculated to lessen confidence in a valuable preventive of small-pox?

To this, every physician from whom the Committee have had information concurs. They further state, to this cause may justly be ascribed a number of the cases of varioloid and small-pox, which

occur after vaccination, and that it has tended materially to increase the confidence in vaccine.

*Q. 10th.* During your experience, have you not found custom for persons, not physicians, to vaccinate their domestic families, to save the expense of getting a physician? *A.* I responded, that few heads of families employ a physician for their servants, and many even vaccinate their children.

*Q. 11th.* Do you not think that taking so much matter for the custom, from a pustule when there is only one, lessens the force of a constitutional impression being made; and that it is better to leave one pustule uninjured than to go through the stages?

*A.* It is generally believed, that taking too much matter for the custom might prevent its full and proper development. It would be better to make two or three incisions on one arm, and take only one pustule, to take as little as possible from the arm of prudence—the fact of its injurious tendency being positively ascertained.

*Q. 12th.* Do you think at any period of life the power of vaccine becomes diminished in its power on the system, to resist the attack of small-pox?

*A.* Considerable discrepancy of opinion exists among the physicians of Charleston, as well as in other portions of the United States and Europe, upon this subject. It must, at present, be only speculative, sufficient data not having been obtained to enable us to come in any manner to a positive conclusion.

It is generally recommended to re-vaccinate when an epidemic occurs, as a matter of security; for the second vaccination will prove whether the first was efficacious or not. In the first vaccination be efficacious, the second, like varioloid, passes through all its stages and desiccate, and not maturate on the arm before the eruption.

*Q. 13th.* How do you distinguish a spurious from a genuine pustule?

*A.* The only answer to this, which the committee can give, is to describe what constitutes genuine vaccine, and what materially differs from this, may be considered as spurious. On the day after the introduction of the vaccine virus, a red cone is observed—from the fourth to the sixth, seventh, and eighth, a transparent, limpid fluid collects, and an areola appears around the pustule. From the eighth to the tenth, the fluid becomes turbid and of a purulent nature—the scab



centre of the pustule—the circular inflammation is increased and accompanied with fever. From the fourth to the sixteenth, eighteenth, and twentieth days, the scab is completely formed and drops off, leaving a scar having many depressions of a cellular appearance.

It must be remarked, that the stadia in the development of a vaccine pustule are lengthened or diminished in some degree by temperature, being lengthened by cold and lessened by heat. The vaccine virus should be used when it is perfectly limpid and transparent.

Such are the testimonials which your committee have been enabled to bring to your view. They have not given the individual opinions of the medical gentlemen who politely sent answers to the circular, as they would occupy too much space; but they believe they have fairly represented their opinions.

It will thus be seen, from the according testimony of the most scientific and observing physicians in Europe and America, that vaccine has been regarded as one of the greatest blessings conferred upon the human race.

If we look for perfection in any thing, we will be grievously mistaken; but it would be unwise and unphilosophical, because a discovery could not accomplish all that we could wish, that it should be discarded.

The correct method of ascertaining the value of any discovery, is to compare it with others, and if worse, to reject, if better, to adopt. Now your committee maintain, that the evidences which have been brought to your view, prove beyond all matter of controversy, that the introduction of vaccine, although it has not extirpated small-pox, has disarmed it of most of its terrors. Let us observe how many human beings throughout the world are protected alone by vaccine from small-pox, and it becomes a matter of wonder that so many escape that Protean disorder, and of those who do not escape, how few suffer, when it is proved in the unprotected to be most virulent in its form, and most fatal in its consequences. But when we come to consider the many abuses to which vaccination has been exposed, from the number of individuals who have vaccinated, who are incapable of judging what is genuine vaccine, and from the carelessness oftentimes of physicians in not accurately observing its different developments, our confidence in its salutary influence becomes greatly increased.

Before concluding, your committee, by way of recapitulation, would remark—

1st. That since the introduction of vaccine, small-pox has been much less frequent, and the number of deaths from it greatly diminished.

2d. That the inoculated with small-pox, and the vaccinated, have the varioloid with equal virulence, and if the number of vaccinated who have the varioloid be greater, it may be justly ascribed to the fact, that the greater proportion of individuals are protected by vaccine. Furthermore, varioloid sometimes occurs among those who have had the natural small-pox, as well as those who are altogether unprotected.

3d. That previous to the introduction of vaccination or inoculation with small-pox, secondary small-pox occurred, and presenting forms different from the genuine small-pox, but partaking of its character.

4th. That in a great number of cases where small-pox has occurred after vaccination, and even varioloid, it has arisen from the vaccine virus being spurious.

5th. That great carelessness has been exhibited in vaccination, it being regarded as a simple operation, and has, therefore, been performed by those who are incapable of deciding whether the vaccine virus has gone through its regular stages.

6th. That although vaccine does not exempt all persons from what is termed varioloid, it does the greater proportion, and must be considered as the most efficient and safe plan of checking the ravages of small-pox, and therefore should be continually practised. Finally, it may be proper to remark that vaccination, in place of diminishing in public confidence from time and experience, is increasing. It is becoming general, not only in Europe and America, and the colonies, but in India; and the present Turkish sultan has had his children vaccinated, as an example to, and a means of introducing it among, his people. In several kingdoms of Europe, vaccination is conducted under the auspices of government. In the United States it is generally recommended, and in a few large cities vaccine institutions have been instituted, but it is much to be deplored that a means so simple, and yet so signal in its beneficial effects, should still be so neglected. To show how efficient vaccine is when properly conducted, the following out of many other evidences are presented to your view.

Dr. LUDERS remarks, that of two hundred and twenty-three thousand nine hundred and thirty-nine vaccinated, between 1801 and 1822, in Holstein, where the measures of the government ensure a perfect vaccination, there had occurred, down to 1824, only two cases of small-pox, and that in Denmark, among four hundred and forty-seven thousand six hundred and five vaccinated, only one such case has been met with.

Again, in the Orphan Institution of Charleston, having one hundred

and fifty souls, all of whom, except the officers and servants, are children, Dr. LOGAN, the physician to that institution, remarks, "Not a single case of small-pox or varioloid has occurred. All of the children are vaccinated by him, and if they have been previously subjected to that process, are re-vaccinated, to test the efficiency of the previous vaccination; and these children have been allowed to have communication with the citizens generally."

In conclusion, your committee would strenuously urge the propriety of vaccine institutions being established in the principal cities in our state, and would strongly recommend the citizens never to neglect having all under their care vaccinated. It is with pleasure they state that the city council have made an honourable and worthy advance in this important measure, and it is earnestly to be desired that what they have begun may be more generally and extensively adopted.

Respectfully submitted,

THOMAS Y. SIMONS, M. D.,	<i>Chairman.</i>	} <i>Committee.</i>
J. MOTTE CAMPBELL, M. D.		
GEORGE LOGAN, M. D.		



## REVIEW.

ART. XI. *Observations on the Structure and Diseases of the Testis.*

By Sir ASTLEY COOPER, Bart. F. R. S., &c. pp. 245, large quarto, with plates. London, 1830.

IN undertaking a short analysis of this work for the information of our readers, it affords the greatest pleasure to express a conviction of its value, and of the many important professional precepts which it contains. The entire style in which it is got up, reflects much credit on the British press, and is evidently the result of much labour on the part of its distinguished author. The typographical part is finely executed, and the anatomical and pathological features elegantly illustrated by plates, each of which contains a number of figures representing natural colours. Sir Astley Cooper's name is so favourably known in the United States, that it requires no preparation of the public mind to receive indulgently his professional contributions. In addition to the intrinsic merit of the work under review, we cannot be less than much pleased in seeing one so abundantly rich as he is in professional honours, and in the means of personal comfort, still manifesting a zealous loyalty to his profession, and in the midst of every temptation to indulgence and relaxation, augmenting his well-earned fame, through the arduous course of dissections and clinical observations, and closing his professional life by bestowing such excellent legacies on his successors. In this he executes what all old practitioners recommend, but unfortunately too few perform.

The subjects treated of are the anatomy of the testis—its acute inflammation—simple chronic diseases—irritable testis—its inflammation from mumps—hydatids—scrofulous inflammation—venereal inflammation—ossific inflammation—scirrhus and fungoid diseases—castration—hydrocele—inflammation of the tunica vaginalis—cartilaginous bodies in the tunica vaginalis—fungoid inflammation in the same—hæmatocele—varicocele and chimney-sweeper's cancer. From the preceding list it will be seen that its range is extensive, and at least includes all the diseases of the testis that the practitioner is commonly called upon to manage.

*Anatomy of the Testis.*—This part of the subject has been treated in considerable detail, and the observations are, in general, confirmatory of the views of the best authorities. His injections and dissec-

tions seem to have been from the representation of them remarkably successful. There are, however, some peculiarities in his opinions. The average measurement of the testis he gives as two inches, by one and a half. This is certainly beyond the standard of the United States. The notion of a dartos muscle is repudiated in toto; in this opinion, however, we think the learned author rather too exclusive—for though in by far the majority of subjects its vestiges are extinct, yet occasionally the muscular character is very distinct, particularly when the colour has been evolved by the use of nitre. We also think contrary to his assertion, that the natural motions of the scrotum are in favour of this muscularity. Sir Astley considers the tunica albuginea to consist of two laminæ, the outer one resembling in its fibrous character the sclerotic coat of the eye—and the inner layer, which he calls the tunica vasculosa, and which he asserts to be highly vascular, and carrying its prolongations through the substance of the testis, to furnish pouches which conduct the blood-vessels, and envelope the tubuli seminiferi. This is an improved modification of the ordinary description of the septulæ testis. The corpus highmorianum, which exists at the back of the testis, Sir Astley, without referring to the established name, or indeed seeming to consider the knowledge of the part as common place, proposes, we think with very equivocal utility, to call the mediastinum testis. We have no objection to the term itself, but as the former is sanctioned by long and general usage, the introduction in its place of a new one, is detrimental, by a multiplication of terms, in a science already profuse in them. This effort, by the way, is not the only one in his book, and as the objection is equally applicable in other instances, we would here, as the advocate of anatomy, enter our general protest against it. There is no individual now alive, whose reputation can effect such substitution with the body of experienced anatomists, and a partial reform merely serves to make the inexperienced, misunderstand.

It will be unnecessary to trace the author through the description of the several parts of the testis, and its auxiliary structure; the whole is executed, as stated, much in detail, and in a very elaborate though satisfactory manner. The author coincides with Mr. JULIUS CLOQUET, on the anatomy of the cremaster muscle, (p. 42,) but does not refer to this very eminent anatomist as the origin of his information, in which we think he has made rather an exceptionable omission, considering that the observations of Mr. Cloquet on this subject are comparatively recent. We would indeed remark further, that as much of this work is devoted to pure anatomical descriptions of the testis, it as a scientific production, is singularly and rather lamenta-

bly destitute of reference, to what has been done by other able men, on precisely the same subject. Though elaborate, it is written with as much naiveté as if its excellent author were nearly all the time upon ground heretofore unexplored, either by his own countrymen or others. We do not think that the actual degree of novelty in it, compensates fully, for the omission of ordinary scientific acknowledgments. A strong personal regard for the author, inclines us to touch with lenity its defects; and yet this is one which perhaps the paramount interests of anatomy justify us in pointing out. We have indeed been frequently struck with the *insular* character of medical works emanating from the London press, and would scarcely suppose from the poverty of reference in them to the scientific labours of foreigners, that they radiate from a point of the globe, connected with other countries by almost innumerable channels of trade. Sir Astley is known to cultivate the most hospitable and liberal intercourse with foreign professional men; we therefore feel mortified in seeing this quarantine of other good works established in his own, especially when the latter might have been improved, by relaxing it somewhat. Living as we Americans do, at a great distance, and under circumstances unfavourable to national partialities or prejudices, we view tranquilly the scientific labours of all countries; we have no objection to receive such information as is useful, and as little hesitation in rejecting such as is trivial, and brought forward by the influence of high names or strong state connexions. Should these lines ever meet the eye of the distinguished author, we are assured that they will communicate nothing new to him in quoting, as also well worthy of study, the excellent plates and descriptions of ALBINUS, HALLER, LODER, RUYSCH, MUSKOC, HUXTER, &c. &c. on the same topic, none of which are referred to by him.

The acknowledged difficulty of injecting the tubuli seminiferi will make the following hint valuable.

“Having traced the canals of the rete (testis) and found that they were situated in and completely inclosed in the tunica albuginea, it struck me that I might inject these tubes with glue, or even coarse injection, by passing a fine silver or steel pipe into the canals of the rete; and having made trial of this plan, I have injected the tubuli seminiferi with coloured fine injection, and the vasa efferentia were also readily filled, and have been thus able to make some beautiful preparations, more easily dissected and much less easily spoiled, than those which are made by injecting the tubes with quicksilver. The rete can even be filled with coarse injection, and the beginnings of the tubuli and of the vasa efferentia will receive the injection. If the injecting pipe be placed in the back of the mediastinum, the injection readily escapes into the absorbent vessels, and those of the spermatic cord become filled.”



*Diseases.*—The following observations exhibit a qualified and rational view of certain doctrines which were once very prevalent, and will perhaps indicate the general tenor of the author's mind on those points:—

“Hernia humoralis has been the term usually employed by surgeons, to express the inflammatory state of this organ (the testis;) but it is an appellation obviously founded in false physiological views, and upon mistaken pathological principles. The humoral pathology has vanished under better defined, and more correct pathological opinions; and diseases are at present attributed more to the altered actions of the solids, than to a change in the nature of the fluids. Yet perhaps the moderns have gone into a contrary extreme, and have too much lost sight of the fluids in the morbid changes of the body. For it is clear that the secreted fluids are often so changed in their nature, as to be capable of producing disease, and even of becoming poisonous—as the mucus of the urethra, in gonorrhœa—the matter of a chancre—the secretion of a small-pox pustule—and the fluid of a vaccinè vesicle. My friend Mr. Colman has also found, that if the blood of a horse affected with glanders, be injected into the veins of another and healthy horse, it will produce the glanders in that animal; and thus he proves, by direct experiment, that the fluids are affected in that disease, as well as the solids; for its blood, the mucus of the membrane of the nose, the sinuses of the bones of the head and face, and even the lungs themselves, are brought into a diseased state. But still the term hernia humoralis is most improperly applied to inflammation of the testis; for although the disease be the consequence of gonorrhœa, it has nothing gonorrheal in its character, or venereal in its nature, and if I were not fearful of being thought affected, I should give it the name of *testitis*.”

These views will probably receive the sanction of most practical pathologists of the present day, and we would merely remark, that the author's difficulty of a good name, has already been overcome for some years past, by the adoption of that of *didymitis* by very excellent authority,\* upon admitted principles of the modern and improved nomenclature of diseases.

Sir Astley recommends for this affection an active antiphlogistic treatment, with suspension of the part, and a recumbent position, in fact, the mode of management commonly adopted. Should circumstances render the application of leeches inconvenient, he considers that a good substitute may be found in puncturing, transversely, three or four veins of the scrotum with the point of a lancet, the patient being upright. They will bleed freely, especially if the scrotum be placed in warm water, and upon the patient lying down the bleeding will cease.

Should the depleting practice not succeed, from a peculiar irrita-

\* Roche and Sansom.

bility of the patient's system, our author recommends submuriate of mercury, with Dover's powders; but he specifies neither the dose nor the duration of such treatment. He considers that immediately upon the formation of matter by suppuration, a free opening should be made into its focus, to prevent the destruction of the tubuli seminferi.

For the chronic induration and enlargement of the testis, consequent to its acute inflammation, Sir A. recommends various ointments, the basis of which is either mercury or iodine—he speaks highly of an oiled silk bag; also of the internal mercurial treatment, &c. From the variety of his prescriptions, we are inclined to think that he, like the rest of us, has found this rather an untractable affection.

The chapter on irritable testis is highly interesting; the affection is principally known by an undue and permanent sensibility of the part, attended with but little tumefaction. All motion and even handling is attended with an increase of pain. Sir A. says that it sometimes endures for years, and that he has found it occasionally so untractable, attended with so much distress, and producing such complete inaptitude for business or pleasure, that he has been thrice compelled to acquiesce in the wishes of patients to obtain relief from an operation. The author does not consider this disease to be inflammatory, but rather of the nature of *tic douloureux*. On dissecting the testicles which he removed for it, he found no apparent change of structure in any of them. His treatment is tonic, narcotic, mercurial, and revulsive, but not depletory.

On hydatid disease, Sir Astley remarks, that there is so strong a resemblance between it and hydrocele, that it is occasionally misunderstood by the most experienced practitioners of the metropolis:

“I know there are persons who never confess an error, but give all their successful cases to the world, carefully concealing those that are unfortunate, and thus lead young men to believe that our profession is much more successful than it really is; but this is a most unfair procedure, for it is only by a comparison of success and misfortune that a fair and honest conclusion can be drawn. A surgeon once said to me, ‘you are foolish in mentioning your unsuccessful cases, which the world will discover soon enough.’ To which I might have replied, ‘you are dishonest in relating those only which are successful, as you thus give an improper colouring to your profession.’

“For myself, I confess that I have been two or three times mistaken, and put a lancet into the part, expecting to find water issue, and a few drops of blood only have followed. But further I will observe, that I have no shame in confessing this, nor have I seen mischief arising from it; but on the contrary, in doubtful cases, I recommend that a small incision be made into the tunica vaginalis, to ascertain if it contain a fluid or not. In doing this, no injury can happen to

the testis, and the surgeon's mind is completely at rest respecting the existence of hydrocele."

In addition to this test, Sir Astley considers that the following diagnostics should be attended to in hydatid disease:—A yielding rather than a fluctuation—a heavier swelling—the general form of the testis being preserved, although it is somewhat more pyriform—the entire absence of transparency—the sensation of the testis being squeezed, if the compression be considerable—the dilated state of the vessels of the cord and scrotum—and the testis in hydrocele being felt at the lower and back part of the swelling.

Our personal experience is in favour of the difficulty of distinguishing between hydrocele and hydatid disease, and we have seen one case where the affection was not cleared up until a trocar was introduced in fact for a hydrocele, and the water drawn off.

Sir Astley considers all other treatment but extirpation as useless in this disease, and his experience teaches that to be completely successful. We are sorry that we cannot join him in this experience, in two cases which have come under our view, and where the testicle was the size of a large ostrich egg; it was found to be attended with great enlargement and fungoid degenerescence of the lumbar lymphatic glands. In the one case the patient died shortly after the operation, and in the other at a more remote period. The plate on this disease is admirably executed.

The scrofulous inflammation of the testis, is considered by the author to be merely the result of that vitiation of our tissues which occurs in the scrofulous diathesis; he has given the several indications of this which we have no occasion to repeat. He considers the most of the secretory glands as exempt from this degenerescence excepting the testicle, which is subject to it from puberty till manhood, and occasionally even in infancy. This affection is marked by swelling, without pain, and having a very slow increase; the scrotum is undischoured, and its veins are not enlarged. After a while suppuration follows, and most frequently in the epididymis. If the affection be not cured, the testis wastes away, until only a very small portion is left.

As Sir Astley views this as a disease of debility, he accordingly recommends air, sea-bathing, tonics, alteratives and iodine; to cure the sinuses which are left he uses stimulating injections.

Venereal inflammation of the testis, which may be doubted by some, our author speaks of as having frequently presented itself to him, along with the secondary symptoms of syphilis. His remedy for it, is a course of mercury.



His observations on fungoid disease present the characters of this affection in extenso, and in a very interesting light. When once formed he considers the complaint as hopeless, for it runs on to a fatal termination in spite of internal remedies, castration, or any thing else which has been heretofore devised. He, notwithstanding, recommends the removal of the testicle within three months of the beginning of the disease, and the use of alterative medicines to prevent the return of the latter. „It is scarcely necessary to state that this alterative plan consists in the administration of the preparations of mercury. As the cases quoted in illustration were all fatal, we have yet to learn whether the treatment will succeed.

On the subject of varicocele, Sir Astley recommends the palliative treatment in common use, as a suspensory bandage, refrigerant lotions, and avoiding tight clothing about the abdomen. He puts no confidence in tying up the spermatic veins, and makes the following remarks thereon.

“It is an operation which I should dread most exceedingly, as placing the life in great hazard, and which I would not therefore recommend: for operations upon veins, from the great irritability of those vessels, are more dangerous than those on arteries, extended inflammation sometimes following, sometimes even to the heart itself; and often a suppurative inflammation on their inner coats, which I have several times seen destroy life in operations on the veins of the extremities.”

In taking our leave of this production, we feel it a duty to express again our sentiments of its value, and to recommend it to the attention of the medical public.

W. E. H.

## BIBLIOGRAPHICAL NOTICES.

XII. *History of Chronic Phlegmasiæ, or Inflammations, founded on Clinical Experience and Pathological Anatomy, exhibiting a view of the different varieties and complications of these Diseases, with their various Methods of Treatment.* By P. J. V. BROUSSAIS, M. D. Knight of the Royal Order of the Legion of Honour, Physician-in-Chief and First Professor in the Military Hospital of Instruction of Paris, Member of the Royal Academy of Medicine, of the Royal Medical Society of Madrid, of the Patriotic Society of Cordova, Corresponding Member of the Society of Emulation of Liege, of the Medical Societies of Philadelphia, New Orleans, and Louvain, &c. &c. Translated from the French of the Fourth Edition, by ISAAC HAYS, M. D. and R. EGLESFELD GRIFFITH, M. D. Members of the American Philosophical Society, of the Academy of Natural Sciences, Honorary Members of the Philadelphia Medical Society, &c. &c. Philadelphia, Carey & Lea. 8vo. Vol. I. pp. 497; Vol. II. pp. 404.

We have long desired to see an English version of this chef-d'œuvre of the founder of physiological medicine. Standing as it does, as the parent stock whence have issued the two rival schools of modern medicine, its mode of investigating diseases, as well as the facts which it contains, should be familiar to all who take an interest in following up medical science in its present rapidly improving condition. For where shall we find, among the numerous works which have appeared in France since the first edition of the *History of Chronic Phlegmasiæ*, in 1808, one that has surpassed this their great prototype; or even connected in so clear and philosophical a manner the morbid alterations of structure disclosed after death, with the antecedent operation of morbid causes and the modifying effects of remedial agents, so as to deduce from the whole a body of doctrine in the true spirit of the inductive system, as is every where exhibited in the work before us? Let us go one step further. The physiological doctrines, based, as all must admit, on a knowledge of the healthy and morbid structures of the system, and the influence which external and internal stimuli exert on the various condition of these structures, are in truth intimately connected with the progress of pathological anatomy, and must eventually give to such researches what they shall actually possess of practical value; however the anatomical pathologist of the present time may disclaim the connection, and pretend to build up a system of science on anatomical characters wholly devoid of theoretical deductions. Although many of the works of this class have largely partaken of this spirit, they all exhibit, in a greater or less degree, the influences of prejudice and early preconceptions. Let us recal, in a cursory way, the characteristic features of some of the most eminent, and examine how far they have advanced the science in deviating from their great model.

The immortal work of LAXMNER's, it must be confessed has greatly advanced our knowledge of the diagnosis of disease: of the chest, still the spirit of his

investigations tends, in our opinion, to give a vicious direction to the study of pathology, by viewing too exclusively the organic lesions as constituting the essence of the disease, without duly appreciating the various agents that have modified these alterations in their progress, from their incipient condition to their fatal termination. Such a mode of investigation is very far from justly estimating the effects of irritation, with their attendant consequences, as first pointed out in the work before us, and still more fully developed in Broussais' later productions. Even ANDRAL's *Clinique*, containing an immense collection of valuable facts, every where exhibiting persevering research, sagacity of observation, and untiring minuteness of detail in tracing out and displaying the morbid alterations induced, is yet extremely defective as a doctrinal exposition of the science. We rise from the perusal of its numerous cases, conscious of having travelled over an immense field, rich with the fruits of actual observation, but unable to apply its stores to the daily occurrences of practice. The author has endeavoured to execute the work in the exclusive or pure spirit of empirical observation, without allowing himself to be swayed by the opinions or principles of any system or doctrine whatever, either in drawing up the individual cases or in afterwards grouping the whole in conformity with any such previous views; and we are free to acknowledge that he has executed this determination with entire success. Consequently, his facts and observations stand out, separated and detached, in a great measure, from each other, bearing no constant and close relations with the vital laws of the economy, and indeed as a whole are insusceptible of being formed into a system of principles for future guidance in the observation and treatment of diseases. Volumes of such works would doubtless greatly add to our already accumulated mass of valuable but sterile facts, without, however, contributing in any material degree to the advancement of scientific, or what we esteem synonymous, systematic medicine, by extending our knowledge of the laws which regulate the vital operations in health and disease.

If such be the errors of two of the most eminent and successful of the anatomico-pathological school, how much more is there to object to most of the others. CAUVELINER, who perhaps deserves to be placed in the first rank of this class of physicians, is more exclusively a pure pathological anatomist than Laennec himself, and can hardly be considered, in the ordinary acceptation of the term, a cultivator of pathology. His second performance, the *Médecine Pratique*, however, exhibits less of this fault, and deserves to be placed among the valuable contributions of modern pathology; whilst the splendid work now in progress displays rather the talents of an able anatomist than the reasonings of a profound pathologist.

LALLEMAND's most excellent treatise, a work unrivalled on the pathology of the brain, although it was drawn up for the most part from the cases and practice of others, whilst the author was as yet a student of medicine, is too evidently the result of his adoption of the physiological doctrines as inculcated in the *Chronic Phlegmasia*, *Examination*, and other productions of that school, to allow us to class him with the anatomical pathologists. Yet he himself seems unwilling to merge his professional character under the overshadowing influence of the great reformer, and would be considered as advocating no particular system of doctrines. Such feelings may be praiseworthy in themselves,



calculated to advance the general interests of science, and we do not complain of them, but while we accord unqualified praise to the work, as one of the most valuable contributions of the age, we must not be unmindful of the genius that presided over its execution, and has substantially given to it that which has placed it in the very first rank of contemporary productions.

Passing by BAYLE, SERRES, OLIVIER, BERTIN, with many other authors of excellent monographs, as well as the whole host of writers acknowledging themselves to be the adherents and favourers of Broussais' system of doctrines, we will barely mention GENDRIN, BILLARD, ROSTAN, TACHERON, BRESCHET, GEORGET, LOBSTEIN, and BRETONNEAU as furnishing valuable additions to our stock of pathological knowledge under the best influences of the principles of the physiological medicine, without at the same time avowing themselves the advocates of its peculiar tenets.

In this long list of the authors of the anatomico-pathological school, we have omitted the name of LOUIS, because we have nothing to object to him on the score of his mode of investigating disease, and moreover his labours are sufficiently distinct to deserve to be considered apart from the sect which claims him as a collaborator. Louis is, if possible, less of a theorist than Andral in his *Clinique*, for there is no want of that quality in his *Précis*, yet the rare talent of discrimination with which the different morbid derangements are analyzed, referred to their respective origin, and the collective cases of each disease grouped by their analogous symptoms, all naturally tend to give to his researches a systematic form, and a practical usefulness which we may in vain seek for in the writings of Andral, or indeed of any of the disciples of this school. After the work now under notice, we know of no modern French production so worthy of being translated into our tongue as the *Recherches Anatomico-pathologiques* of Louis, and his work on typhus and other malignant fevers. They seem to us calculated to be of more immediate service than any of the productions of the physiological school. They certainly possess this advantage over any of the writings of that obnoxious sect—they have not been judged and condemned unheard, and all classes, both practitioner and student, would willingly draw from their abundant treasures many excellent practical lessons, without the apprehension of being contaminated at the same time by medical heresies.

In thus passing in rapid review some of the many works that have felt the happy influences of the *History of the Chronic Phlegmasiæ*, let it not be thought that we have lost sight of the work under consideration. We deem its effects in that respect to have been highly important, and that its example will be still felt in the further progress and improvement of the science. Besides, it cannot be expected that we should at this late day make a critical examination of its principles and peculiar doctrines. The high encomiums that were passed on the work\* on its first appearance, in 1808, have never been called in question, even by the staunchest opponents of the physiological medicine, although all the other productions of the author have given rise to a violence and acrimony of controversy that is unexampled in the annals of the profession. We refer, therefore, the reader to its pages for what he will find well worthy of his study and meditation, with simply remarking, that it was in this work Broussais first called the attention of the profession to the great and important truth, that there was a numerous class of obscure diseases with ano-

malous symptoms, which were considered to arise from debility and languor of the system, or some vice or vitiation of the habit, and for which stimulants, under the designation of tonics, antispasmodics, resolvents, deobstruents, &c. according to the particular theory held and the supposed nature of the case, were universally lavished, to the inevitable injury of the constitution and the frequent fatal termination of the disease. That, on the contrary, all these cases arose from and depended upon an inflammatory irritation of an obscure and chronic character of the digestive or respiratory organs, and that they required for their removal the avoidance of all irritating agents, and the employment of depletion, antiphlogistics, emollients, diluents, or appropriate revellants, according to the seat and force of the ailment, and other attendant circumstances. When we consider the benefits that have arisen from the propagation of such views in the treatment of dyspeptic cases alone, we shall not hesitate to place Broussais among the great benefactors of the age, although he had never given to the world the physiological medicine. The prodigal use of stimulants in these cases had been so ancient, universal, and deep-rooted, that it required, in order to meet the question properly, to inquire into and scrutinize the cause of these derangements, the modifying operation of agents on their progress, and to ascertain the nature of the lesions left after death. All this Broussais has done in an able manner, and so far definitely established his principles that no one has endeavoured to refute them by resorting to the same inductive method. The doctrine of the inflammatory origin of tubercles, wherever seated, has encountered more opposition; still, whoever shall dispassionately examine the facts and arguments on which this opinion is founded, must admit that inflammation has much more to do with their production and ulterior changes than either Bayle or Laennec are willing to allow. Moreover, the doctrine of their inflammatory origin is calculated to lead us to place confidence in such hygienic and remedial measures as experience has proved to be of most avail, where our resources at best have heretofore done so little.

We here close our brief remarks, satisfied, if we should be successful in giving our readers as high an opinion of the work as we ourselves entertain of it, we would thereby render a better service than if we had endeavoured to compress its prominent doctrines within the limits of a review. C. D.

New York, September, 1831.

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XIII. *Descriptio Ichthyosis Cornearum Congenitarum in Virgine observatæ, tabulis tribus lapidi incisâ illustrata.* BREMEN. CHR. HELV. SCHMIDT, M. D.

*Description of a Case of Congenital Ichthyosis Cornearum, observed in a Young Girl; with three Lithographic Plates.* By CHR. HELV. SCHMIDT, M. D. Folio, pp. 15. Bremen, 1830.

Frances Kroone, the subject of this case, was born in the town of Düstedt, in Holland, a short distance from the Rhine. When seen by Dr. Schmidt, she was twenty-two years of age; her face was perfectly free from every organic defect, and quite comely; her complexion was fair; her skin soft and thin; her eyebrows and eyelashes yellow, dense, and well-formed; her teeth sound and handsome.

The disease first made its appearance at the origin of the sterno-cleido-mas-

toid muscles, under the form of scurf. The upper portions of the breast and neck not so well covered by the dress, were unaffected by the disease, which was likewise the case in the axillæ, where there was a scanty covering of hair; but on the areolæ of each mamma were to be seen very dense excrescences, arranged in concentric order, and from the inferior part of the breasts the ichthyosis, which was of the simple species, however, at first, covered the whole body, save a place which was but partially affected at the umbilicus, and a few spots upon the back. Numerous small, very dense scales, one or two lines in height, and seated in the skin, covered the whole abdomen, back, nates, feet, and arms, as well as the palms and soles; and the head itself was not entirely free.

On each of the extremities were to be seen firm, horny corpuscles, mingled with some hairs, three or four lines, or even more, in height: one was two or more lines broad, and to appearance squared by rule, some were round, and others again in the form of an inverted cone: the stems of the latter were con-nate in patches of three or four, and impaired in various places the appearance of the checquer work. Between the digital members of the hands and feet, and at their extremities, these horny crusts were broader; partly from the compressions they experienced, and partly from a thicker concretion, on account of the greater sudorific discharge of these parts.

The configurations covering the palms of the hands were extended to the arms, where they were even more numerous and thick, though the lineaments of the arms could still be traced. But the feet and legs were so surprisingly deformed as to render an accurate description very difficult. Upon the extremities of all the phalanges, the disease was likewise to be seen, through which the redness of the subjacent parts appeared. But the feet and especially the right one, were completely sheathed, and the scales were very large and thick on the sole of the foot; some nearly an inch long, and as much elevated; some of the colour and texture of horn, and others of an ivory appearance: there was likewise a great variety in their form.

But the disease did not only invade the epidermis, it attacked the nails of the fingers and toes, which were subjected to similar changes. Those of the fingers were thick, short, rigid, and cloven; the lamina of which they were composed were distinctly seen; their *lunula* of the nails was effaced. Their colour was of a pale yellow, nearly resembling burnt horn; the extremities of the phalanges were pointed. The nails of the toes were thicker than those of the fingers and narrower than usual, composed as it were of horny tubercles, curved upwards, and of irregular form, since as the inferior stratum of the nail was unimpaired, they had elevated a part of the superior surface of the plate.

The head itself was not free from this covering. The whole anterior part of the scalp was covered with large sessile scales, which, just at the margin of the forehead, were separated by a narrow tract of mingled yellow, white, gray, and black hairs, chiefly diseased, which at the occipital portion of the head were collected into a fasciculi of the same kind, six or seven inches long, between which, however, the disease was similarly conspicuous. But these few hairs were said to have only been produced by the greatest care and diligent washing, when the girl had desired to cultivate them for the improvement of her appearance.



The colour of this crust upon the scalp was light yellow, but of a whitish cast, dirty or pulverulent at the upper part of the back, mammae, and surrounding parts, and of a dark leaden hue at the inferior part of the abdomen and back, at the haunches and legs; upon the hands and feet it was of a dirty-yellowish brown and olive hue.

Besides these peculiarities, the whole of the thorax was covered with a singularly loose and peculiar skin, which in some places, where the skin covered the bones only, as at the elbows and knees, formed singular rugæ; in other places, as for instance over the glutei muscles, it composed not less than sixteen or twenty regular semicircles. The rugosities of this diseased skin were so far peculiar to it, that when an attempt was made in the neck or places less affected by the common disease to enclose a portion between the fingers, innumerable rugæ were immediately formed, which was not the case a few inches above in healthier places, or where there was a greater abundance of fat.

But the diseased skin, in places deprived of this covering, appeared dry, harsh, and redder than elsewhere. The corpuscles were firmly adherent, as if rooted in the skin, and bled when torn off by force, though when the hard mass was seized with the forceps, they could be removed without pain. When this was done, a minute, (central,) style of a line in bulk was seen, whitish and softer than wax, which, however, when exposed to the air, was quickly hardened. These hard crusts were chiefly, and especially upon the arms, of a polished appearance, and emitted a noise when they came in contact with hard bodies.

Such is a succinct description of the affection, as observed by Dr. Schmidt in this unfortunate girl, of which M. Alibert has thus spoken in the *Dict. des Sciences Medicales*: "I question whether such a remarkable phenomenon will occur again in the course of ages," &c. She was the third child of a family of four, the parents of which had been some time dead. Her father was a painter. The two brothers and a sister, which composed the rest of the family, were never in the least affected with this disease, nor are their children.

The disease early made its appearance upon the skin of this female. It was observed, in fact, by the accoucheur, four or five days after birth; the skin of the infant presenting a hoary appearance, not removeable by ablution. Her mother likewise observed it, when she had recovered from her indisposition, and attributed it to the neglect of proper cleanliness, and many remedies were immediately applied, but without any effect. Finally, with the superstition common to such persons, in the absence of palpable causes for any particular event, she attributed this affliction of her child to her having fallen into a lake, when pregnant with her and in perfect health, and her being taken sick immediately afterwards, after she had remained a long time upon the trunk of a floating tree.

The diseases to which she was subsequently exposed in her infancy were measles, scarlatina, varicella, and variola; the three first were light attacks, but the last affected her severely, and aggravated for a long time the congenital disorder. None of the variolous cicatrices were visible any where upon the skin, nor in any of the different periods of desquamation did she profess to have been entirely free from ichthyosis. She was also for a few days affected with icterus. There was some stiffness of the fingers of the right hand, and a difficulty in extending them, which she attributed to an inflammatory swelling she

had experienced at the elbow joint; in which there was some similarity, not perhaps entirely fortuitous, with the well-known case of John Lambert, who had little controul over the motion of the right hand, as was remarked by Thilesius, who attributed the cause to his having at too early an age been made to carry the weapons of the hunters.

Frances Kroone at eighteen commenced to menstruate, which she subsequently continued to do at the usual period, and in large quantity. She was not subject to any peculiar diseases and enjoyed good general health. She was more affected by cold than persons are usually, fond of a high temperature, and felt better in summer. In winter she was much annoyed by the coldness and dryness of the winds; when these prevailed, the fissures upon the feet would gape open, so as to admit a finger, and sometimes discharge blood. She perspired spontaneously over the whole body, but especially in the arm-pits. During the cold season, she was obliged oftener than is usual with others to pass her urine, which however was nowise peculiar. Desquamation took place to more extent at the vernal and autumnal equinoxes than at other periods.

The crust upon the hands was not so much of an incumbrance but that she was able to use them in washing herself, and many other manipulations; latterly she had learned some artificial employments, and was able, with her eyes shut, to distinguish by the touch, metals, silk, paper, &c.

Her face and thorax were well formed, and appeared to indicate the same condition of the body; which, however, was not the case. For the extremities were emaciated, and there was great deformity resulting from an inclination of the pelvis, that made the glutei appear thicker and more monstrous, thereby rendering the defect in the legs below, so much the more conspicuous. Indeed, the inclination was so great, that it more than the diseased condition of her feet, rendered her gait vacillating and uncomfortable. Walking likewise excited pain at the acetabula.

Such, at least, are the material facts which, during the few days she remained in the city of Bremen, were gathered respecting this interesting case, by Dr. Schmidt, partly from observation, and partly by inquiries from the individual herself.

Simple ichthyosis, though a disease occasionally occurring, is almost unknown in Germany. This disease was termed by Dr. Schmidt a case of *Ichthyosis cornæ*, and apparently with good reason, for upon other parts of the body, as well as upon the palms of the hands and soles of the feet, there were morbid productions of a horny nature.

Ichthyosis has been considered by writers, viz. Thilesius, Alibert, Martin, &c. as an hereditary disease, occurring generally in the first two or three months of existence; in this individual it was observed four or five days after birth.

The hereditary nature of ichthyosis was conspicuous in the Lambert family, all the males of which, but none of the females, were affected for three generations. Many cases exist to prove that it is not always propagated by diseased parents to their children, some escaping in the same family, while others were affected. There is proof also in the history of some females, as described by P. J. Martin, of its hereditary nature, in which it was transmitted from a mother to her daughter. It is stated by Rayer, that a man named John Brayer, and his brother, both sons of a diseased father, laboured under general ichthyosis, while

their sisters, and their sisters' children, were entirely free, so that there is direct evidence of its having been transmitted from father to son, and from mother to daughter; this at least has been the case in simple ichthyosis, as experience has taught.

The causes of ichthyosis is as yet unknown. It is supposed by Alibert, with some little tincture of the prejudice of the vulgar, that in maritime places, and along rivers where fish abound, the system, by being fed from their products, may be disposed to this disease; though he afterwards more courageously asserts "that the causes of this disgusting and detestable disease is totally unknown." This supposition of M. Alibert, which is not wholly without supporters, may perhaps, with those fond of the marvellous, find an increase of support, from the fact that the mother of this girl, was, while pregnant with her, exposed in a lake upon the floating trunk of a tree, to the malignant glances of the watery basilisks. It is perhaps a sufficient trial of our credulity to attribute this intra-uterine derangement, (as others of an analogous nature are,) to the mental anxiety and dread of the mother, acting through the sympathetic nerves, which prudently observes Dr. Schmidt, he will neither admit nor gainsay. There now exists well-authenticated instances of sudden and surprising changes on the surface of the body from moral emotions, such as the turning the hair from black to gray in the course of a few hours, and similar effects in the rete mucosum. Where we cannot explain, it is safer and more manly to admit our ignorance, for then at least the road is open to improvement.

Ichthyosis has by most writers been considered an affection of the epidermis only, though Thilesius considered it to consist in a morbid state of the sebaceous follicles of the cutis. Dr. Schmidt, for the following reasons, is disposed to coincide in opinion with the latter: partly because he has seen some of these horny tubercles occupying the site of these follicles, and partly because when they were carefully extracted, an elongation, having the appearance of a root, appeared to come from the follicles themselves. Besides, as the epidermis is a production of the subjacent rete Malpighi, any cause producing a morbid secretion of this structure, would give rise to an unusual epidermis. From this cause, the whole skin was affected in the case which forms the subject of this treatise, and there was in support of this opinion, an unusual deficiency of fat over the whole body, and especially in the diseased parts, which produced perhaps the looseness and rugosity of the skin. However this may be, the secretion of the epidermis was changed both in quality and quantity. Admitting that these horny bodies consisted in induration of the epidermis, still the sudden and peculiar hardening, and the great mass of the secretions, indicates such derangement of the *visus formativus*, as to confirm the opinion of the hereditary nature of the disease.

These substances were chemically very analogous to the horn, hair, and shells of animals.

That Frances, observes Dr. Schmidt, whose skin was thus covered, sweated freely over the whole body, appears to be owing to the peculiar pores lately investigated by Thomas Gordon Hake. In some places where no crust was found, the author is disposed to attribute the cause, to the profuseness of the sudatory discharge. In the same way he likewise accounts for the absence of the scales in the palms and soles of the Lambert family. Such, too, is nearly



the opinion of Thilesius. In all the cases above referred to, no crusts were found in the axillæ, which were attributed to the same cause, copious discharge of sweat; which the girl admitted was very abundant there, as was likewise demonstrated by the hircine odour, and effects upon the vestments of the part.

All the writers upon this disease assert that the individuals affected with it, though possessing a tolerable proportion of health, were nevertheless subject to rachites from their birth.

In lighter cases of ichthyosis, and especially in infants, there is, in the opinion of Dr. Schmidt, more or less of the scrofulous diathesis present, and many of which are affected with *crustæ lactæ*, but in all which cases he likewise observed a dryness and rugosity of the skin, as well as secretions analogous to that of ichthyosis upon the skin of those labouring under atrophy, tabes, and dropsy, which appear to arise in a similar way from the lack of fatty matter peculiar to this disease, and to disappear when it was restored to the skin.

Whether or not, the extreme emaciation of the extremities in this female was owing to an affection of the whole lymphatic system, and to which the disorder of her general health was to be ascribed, it is not possible, from the observations given, to decide. The peculiarly melancholy expression of her features, is, however, well deserving of notice, a circumstance which Alibert asserts is not only always an attendant upon ichthyosis cornea, but likewise aggravates the disorder so much that stupidity may be the result, in consequence of the continued contemplation of their deformity and their gloomy prospects for the future.

In regard to the colour of the crusts, much appears to depend upon the sex of the patient, and the peculiarity of location. "For why," it is asked, "does it appear darker upon the abdomen of the female, which is covered with clothes, than upon the hands and feet, always subject to exposure?"

Dr. Schmidt likewise noted a singular and peculiar slimness of the first digital phalanges, in this female, of which, however, he has seen traces a few times in other diseased affections of the skin. In regard to this fact, he asks, "Whether it is to be considered as an indication of the severer cutaneous diseases, as, on the other hand, a thickness of the phalanges is noticed in those labouring under diseases of the heart and lungs?"

Three very well executed plates accompany this case. The first exhibits the whole person, the second the hand and fore-arm, and the third the foot, the two last are of the size of nature. Dr. Schmidt's publication constitutes an interesting addition to our science.

J. P.

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XIV. *Directions for making Anatomical Preparations, formed on the basis of Pole, Marjolin, and Breschet, and including the New Method of Mr. Swan.* By USHER PARSONS, M. D. Professor of Anatomy and Surgery. Philadelphia, Carey & Lea, 1831.

Perhaps no single circumstance serves more to distinguish the state of medical science at the present period, than the increased attention to healthy and pathological anatomy. While physiological medicine rejects all symptomatology, which does not consist in an accurate knowledge of the connexion between the appearances of disease and the actual condition of the part affected, it renders

necessary a more accurate acquaintance with the normal state of all parts of the system, as it founds its high pretensions upon the revelations received from extensive examinations of diseased organs in every stage, and under all the various circumstances of morbid action. The necessity and importance of frequent post mortem examinations are gradually acquiring the sanction of public opinion; so that among the enlightened, permission is now seldom refused to him who would investigate the cases of rare disease and sudden death, which occur in private practice; while in large cities the infirmaries and hospitals afford to the metropolitan practitioner the most ample opportunities for the prosecution of pathological anatomy. But the pursuit of practical anatomy, with a view to a minute acquaintance with the structure of the human body, requiring patient and protracted dissection, mutilating, and destroying the subject, has still to contend with public prejudice. And, although in most of the medical schools in this, and other countries, little difficulty is now experienced in procuring the necessary subjects, the appeal of the whole medical profession of Massachusetts is still sounding in our ears, and the *self-devotion* of the members of one of the most distinguished surgical colleges in Great Britain is still fresh in our remembrance. Little, however, does it avail the great body of surgeons who are scattered among our villages and throughout the country, that dissection is readily prosecuted in our large cities. Too often they are compelled to undertake the most important operations, depending solely upon the recollection of their anatomical labours when students, and occasional references to text books and plates. Since the establishment of the principal medical colleges in our country, probably few leave them to enter into actual practice, who have not prosecuted practical anatomy, and prepared many pieces of dissection, which, if preserved, would have been invaluable to them in after life. In many places where practical anatomy is taught, the art of making and preserving preparations has been but too little considered; and although some instructions are appended to many of the manuals of dissection which have been published in this country, the American press has produced no systematic treatise on the subject but the work now before us. Since the time of Ruysch and Munro, the art of making anatomical preparations had undergone but little improvement, until within a few years the labours of Dumeril, Breschet, Marjolin, Cloquet, Bell, Pole, and Swan have brought it to its present state of perfection.

Without making much pretension to originality, a claim which the very nature of the subject forbids, the work of Dr. Parsons, uniting the result of the individual labours of all his predecessors, with his own experience, is decidedly the best treatise on the art which we have seen. In the introduction, are contained some valuable remarks upon the economy of dissecting rooms, and the process of dissection, with practical observations on the diseases consequent to wounds produced by instruments when charged with some morbid matter present in the subject. Too often these cases are neglected entirely, until the occurrence of severe pain, tumefaction, and febrile excitement call urgently for relief. To meet these circumstances, the treatment recommended by Dr. Parsons is highly appropriate; but in considering the cure, the Dr. has omitted what we consider of even more importance, the prophylaxis. It may appear to be an unnecessary and timid precaution, but from considerable observation, we are convinced that if the wounds received in dissection were immediately



subjected to strong suction by the mouth, and carefully washed with soap and water, recommended by the late Dr. Godman, we should have no more of these fatal cases; and when the subjects have died of inflammation and suppuration of the serous membranes, we think it should never be omitted.

From the nature of this work, consisting as it does, of plain and practical details, it scarcely will admit of an analysis. Beginning with the ordinary mode of making injected preparations, we have in succession all the different forms, cerated and mercurial, dry, wet, and corroded. The difficulty of filling the minute veins of the extremities with coloured injection, has always been acknowledged, and the attempt has been almost abandoned. The ordinary mode of injecting these vessels with mercury, with the ingenious contrivance of our author for obviating the opposition presented by the valvular structure of the veins, and thus filling the extreme vessels with common injection from the large trunks, we shall give in his own words.

“SECTION XX. *Injection of the arteries and veins of the hands and feet, with coloured injection for dissection and corrosion.*—These preparations have, I believe, never been made by any one but myself. Quicksilver has long been used for filling such veins, by supporting a column of it for some days in an artery going to the hand or foot, and then twisting a cord round the wrist or ankle, and drying and planting the preparation in a pedestal of wax or plaster of Paris, with the fingers and toes upwards. Such a preparation exhibits the superficial vessels very beautifully, and especially the nourishing arteries in the roots of the nails. No coloured injection has, however, within my knowledge, been made of the veins of the fingers and toes, that will admit of their dissection. Proceed in this as in the foregoing case, more particularly described in section 56. When the arteries and veins are filled to running over, insert a pipe into one or two of the largest veins, and without tying the cord, let the part dry as soon as practicable; then shave a thin portion from the ends of the thumb and fingers or toes, and let the quicksilver run out from them, and also from the pipes by inverting the part. Then inject the arterial pipes with coarse cold red injection, and the venous pipes with yellow, white, or dark blue, continuing the pressure till the injection appears at the ends of the fingers. Pass a cord round the wrist and immerse the part in tepid water for a day or two, to restore the softness, so as to admit of dissection; or if the object be to make a corroded preparation, macerate for some months, and wash away the soft parts by a stream of water directed upon it, as described in directions for making natural skeletons of small animals. The obstacle that has hitherto presented itself to injecting the veins of the hand and foot, is their valves. But here the quicksilver, by its upward pressure, if continued till the valves are dried, throws them open, so that the injection flows contrary to the current of the blood, with perfect facility.”

In connexion with the subject of wet preparations, we cannot forbear to advert to the method of preserving the natural colours in specimens of morbid anatomy, as quoted by our author, from an essay by Mr. Gaskoin, in the London Medical Gazette, for 1828. When on a visit to New York last summer, some morbid specimens in the cabinet of one of the most eminent surgeons of that city, prepared in the manner above alluded to, were submitted to our inspection, which retain their original colours and appearance in a remarkable degree.

Besides directions for all the various preparations of actual anatomy, we find the methods of modelling in plaster extracted from Pole; and a useful chapter on the preservation of subjects of comparative anatomy. In short, we consider the appearance of the work before us, as most opportune, at a time when the



facilities of practising dissection and obtaining specimens of pathological anatomy serve to render it peculiarly valuable. We therefore recommend it to the student and practitioner, as the best exposé of the present state of the art of making anatomical preparations, and hope that it will be found in every dissecting room, and in the hands of every one engaged in post-mortem examinations.

With regard to the execution of the work, consisting as it does of plain practical details, we can bestow no greater praise, than to say that the descriptions are for the most part clear, concise, and intelligible; but with respect to the typography, we are sorry to observe many errors, which, though not important in themselves, would not have escaped a professional corrector of the press.

T. C. D.

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XV. *A Manual of Medical Jurisprudence, compiled from the best medical and legal Works, comprising an account, 1st, Of the Ethics of the Medical Profession, 2d, The Charters and Statutes relating to the Faculty; and 3d, All Medico-legal Questions, with the latest decisions: being an Analysis of a course of Lectures on Forensic Medicine, annually delivered in London, &c. &c.* By MICHAEL RYAN, M. D. &c. &c. London, 1831. pp. 309. 8vo.

We have so often in our preceding numbers called the attention of the profession to a branch of study, but too generally neglected in this country, and to the benefits resulting from a competent knowledge of its principles, that it would be superfluous to again repeat the arguments we have adduced in its favour. We have, however, been so much pleased with Dr. Ryan's work, and so well convinced that it is calculated to fulfil the intentions of the author, that we cannot forbear again soliciting the attention of our readers to this important subject. The main object of Dr. Ryan has been to afford the greatest quantum of information in the smallest compass, and in the most familiar manner; or in fact to simplify the subject as much as possible so as to render it intelligible to every class of medical practitioners, as well as to gentlemen of the bar, jurymen, and even general readers. This task the author has executed in a satisfactory manner, and although we do not agree with him in some points, we are acquainted with no work on medical jurisprudence that presents so much valuable information in so condensed and yet so clear a form. Dr. Ryan has freely availed himself of the labours of his predecessors in this department of knowledge, and we are glad to see the high estimation in which he holds the opinion of our countryman, Dr. Beck; who, to use Dr. R.'s words, and which must be echoed by all who have studied the "*Elements of Medical Jurisprudence*," "is an ornament to his profession, and an honour to his country." It is one peculiar merit of Dr. Ryan's, that he frankly acknowledges his obligations to his fellow labourers in science, and that he never avails himself of the observations of others without giving them due credit; this is so rare in the present book-making age, that we are happy in holding up our authors scrupulous attention in "*rendering unto Cæsar the things that are Cæsar's*," as an example by which we might all profit.

The work is divided into three sections: the first is devoted to the consideration of the important subject of medical ethics—a subject so intimately con-

nected with the standing and dignity of the profession, that it becomes a matter of astonishment that it has been so wholly overlooked of late years; "there never was a period in medical history in which ethics were so neglected and violated as in this 'age of intellect,' nor the dignity of the science so degraded and disregarded." Dr. Ryan first gives a sketch of medical ethics of Hippocrates and his eminent successors, and the influence they exercised on the profession; he then gives the ethics of the middle ages, which are followed by a consideration of those of the present day, as laid down by Gregory, Percival, &c. These chapters will amply repay an attentive perusal, and if the precepts contained in them could be universally adopted, it would save us from the pain and disgrace of witnessing those constant squabbles among members of the profession which tend so powerfully to depreciate its standing with the public.

The two next chapters relate to the laws of the medical profession which are in force in Great Britain and Ireland; many of these being mere local enactments, possess but little interest to the American reader; others, however, depending on common law, are equally in force in this country, such as the liability of witnesses, &c.

In the next chapter Dr. Ryan begins the discussion of questions of medical jurisprudence, by such as relate to disqualifications for marriage; these are either physical, moral or accidental, and the author justly deduces the following general principles, "1st, That to declare either sex impotent, it is necessary that certain physical causes be permanent malformations, or accidental lesions, evident to our senses. 2d, These causes when rigorously examined, are few in number. 3d, The moral causes ought not to be taken into consideration, as they would serve as an excuse for an individual accused of impotence." The chapter on pregnancy which succeeds, though short is clear, and the positions well laid down. Dr. Ryan appears to agree with Kennedy and others, that auscultation is the only infallible test of pregnancy. The next points discussed are those of abortion and delivery, on which as may be supposed, nothing new was to be said. In chapter XI. the author enters on the difficult subject of infanticide; with this part of Dr. Ryan's work we have not been as well satisfied as with the others, it is too short, and does not point out with sufficient clearness the numerous fallacies attendant on all the proposed tests of the life or death of the infant; in this part of his work he has made ample use of Dr. Beck's treatise, and which he appears to consider as the highest authority on the subject.

The chapter on rape deserves attention; Dr. Ryan has adopted the opinion now beginning to be generally held, that there are no positive signs of virginity, as physical proofs are equivocal and may all be wanting, without giving rise to a well-grounded suspicion against the female.

The author next discusses those medico-legal questions, that relate to attempts against health or life. This is done clearly and perspicuously, though we think he has omitted some important facts that might have considerable influence on our decision. The observations on homicide by asphyxia, in which the author includes hanging, submersion, the introduction of foreign substances into the trachea, and the effects of the non-respirable gases, of course contain little that is new; those, however, on the poisons are excellent, and present a condensed view of all the recent information on the subject. We are glad to

see that Dr. Ryan makes such constant reference to the work of Christison, certainly the first authority on this intricate subject that we possess, and one that we are astonished has never been republished in this country.

As respects the chapter on adulterations of alimentary matters, we must confess that it has always appeared to us that they are of much less importance than is usually attributed to them: notwithstanding it is now many years since Accum proved that death and disease lurked in every mouthful that were swallowed, we do not find that mankind have been more cautious, or that they have materially suffered from their neglect of his peptic precepts. The adulteration of medicines is of much more vital interest, and we know that it is practised to a very great extent, not however, to the degree which Dr. Ryan states occurs in England; where he says it is almost impossible to procure a single article in the Pharmacopœia in a genuine form. His remarks on the state of charlatanism, we are sorry to admit, are but too applicable to this country, "where the most ignorant and illiterate persons are allowed, with reckless indifference, to assume the titles and privileges of educated medical men, to the destruction of human health and life." What encouragement is held out to the regular physician who has sacrificed health and property to the study of his art, when he finds himself superseded by some inspired pretender; when he sees the preparations of an illiterate nostrum-monger, recommended to the world under the sanction of some of the highest names in the profession? "But unhappily," says an able writer, "it appears that John Bull and his family are not gifted with the power of being beware of hypocrisy, advertising charlatans and empirical nostrums; but through their proneness to gullability and love of the marvellous, the trade of quackery is daily increasing, and some hundreds of quacks swarm in every corner of the metropolis, and fatten on the murders which they are constantly perpetrating with their poisons." These remarks, though intended for London, are but too true of every large city in the United States, where wholesale quackery is full as rife as in any part of the world.

The next chapter on mental alienation, although very short, contains a valuable summary of legal decisions on this intricate medico-legal question. The shades and degrees of insanity are so various, and the definition of insanity as given even by the best authorities so vague and discrepant, that there are no cases in which a medical witness is called on for his opinion, that demand more circumspection and close observation. In fact, as is observed by Mr. Amos, "the degree and kind of insanity, which renders a person responsible for criminal acts, is a subject upon which it is impossible to give precise and scientific notions."

The chapters on simulated and disqualifying diseases are much too brief to be of much service. When a medical man is called upon to examine individuals supposed to be labouring under certain diseases, the existence of which would exempt them from certain public duties, or screen them from merited justice, he would grossly violate his obligations to the public, if he impeded the administration of the laws; in these cases he is not to be influenced by mere humanity, but is bound to give a correct decision according to the best of his skill and knowledge.

The last chapter on medical evidence is very valuable, and though not equal to Dr. Smith's Treatise, will amply repay an attentive perusal.



In the foregoing short analysis of the contents of Dr. Ryan's volume, we have merely wished to apprise our readers of its contents, and the plan on which it is arranged; neither time or space have permitted us to enter on a review of the author's opinions, nor to dilate on the various questions of which he treats. An American edition of it, with such additions and alterations as may be required to adapt it to the jurisprudence of this country, would, we think, be a valuable addition to our medical and legal libraries: not as a substitute for the more extended work of Dr. Beck, but as a *catalogue raisonné* of the various questions in which jurisprudence calls on her sister science for elucidation.

R. E. G.

XVI. *Medico-Chirurgical Transactions*. Vol. XVI. Part II. London, 1831. pp. 236, 8vo.

The portion of the sixteenth volume of the Transactions of the London Medico-Chirurgical Society, now under notice, comprises eight articles, all of which are more or less interesting. The first is an elaborate essay on omental hernia, by JOHN MACFARLANE, M. D. of Glasgow. The omentum enters into the formation of nearly all the varieties of hernia, but from its position it is less frequently met with in those which pass out through the inferior apertures of the abdomen or pelvis. It is more frequently encountered in umbilical than in inguinal, and in inguinal than in crural hernia. As it descends lower in the left than in the right side of the abdomen, it escapes more readily through the left inguinal opening than through the right; Dr. Macfarlane thinks that three-fourths of the cases of epiplocele are in the left groin. In some rare cases the omentum has escaped on both sides in the same patient, and in the same side it has been found to protrude through both inguinal and crural openings.

This disease occurs more frequently in advanced than in early life; the omentum in the latter period being small; Dr. M. has, however, seen three cases of congenital rupture in very young children, in one of which the tumour appeared to consist wholly, and in the other two, partly of omentum.

Epiplocele is less dangerous, and is usually attended with less urgent and alarming symptoms than intestinal rupture; nevertheless, in strangulated omental hernia the symptoms are often extremely severe, and Dr. M. is of opinion that it requires a more active and prompt treatment than seems to be followed by the chief surgical authorities of the present day.

The omental seldom attains the magnitude of an intestinal rupture; the enlargement of the tumour in the latter depending upon the repeated escape of new portions of bowel, while in the former it is more frequently to be attributed to the morbid enlargement of the displaced part. When the tumour is composed wholly of omentum, it usually presents an uneven surface, has a soft, doughy feel, and wants the tension and elasticity of enterocoele.

"When the tumour is small, recent, and unchanged in structure, it is often ill defined; and when in this state, it occupies the situation of the inguinal opening, it is apt to be mistaken for a partial enlargement of the spermatic cord; and even in an old irreducible epiplocele, the tumour sometimes presents externally a smooth and polished surface, with the tension, and other characters of an intestinal rupture. This is especially observable when the sac is distended with fluid; but even when this complication exists, we shall seldom fail, unless

the tension be very great, in recognising the hard and irregular omentum through the interposed fluid. The same uniformly smooth surface is occasionally met with, when the omentum contained in the sac is not consolidated, or otherwise morbidly changed, but is simply enlarged, from hypertrophy or obesity. Here, however, the absence of tension and elasticity, and the peculiar flabby state of the tumour, will render the diagnosis comparatively easy.

"The omentum, particularly when loaded with fat, escapes from the abdomen more readily than the intestines, is reduced with greater difficulty, and requires a stronger spring truss to prevent its reprotrusion."

In the employment of taxis for the reduction of epiplocele, Dr. M. recommends the avoidance of all violence or force, the omentum, when too much handled, being liable to be contused and lacerated. Dr. M. states that he has seen one case in which, from continued and powerful efforts at reduction, the omentum was lacerated in several places; and in another, the protruded part was livid and ecchymosed from the extravasation of blood into its cellular texture. The contused omentum, instead of being excised, was, unfortunately, returned into the abdomen, became gangrenous, and produced death.

"On the sudden protrusion of a portion of omentum, especially when it occurs for the first time, we may expect to find the accompanying symptoms extremely urgent. Strangulation may be immediately produced, violent pain in the tumour and abdomen excited, with vomiting, hiccup, and obstinate constipation. In some cases an operation is indispensable, whilst in others the distressing symptoms gradually yield, so soon as free alvine evacuations are procured."

The reduction of an epiplocele may be prevented, according to Dr. M. 1st, by adhesion of the omentum to the inner surface of the body, or neck of the sac. 2d. By enlargement of the omentum from engorgement of its vessels; the return of the blood through the veins being sometimes impeded by pressure at the hernial aperture. 3d. By the part of the omentum which passes through the neck of the sac being compressed into a hard, smooth cord, while the portion in the sac itself remains loose and capable of being expanded. This Pott considered as the most frequent impediment to the reduction of an epiplocele. 4th. From its having undergone a morbid enlargement. Dr. M. has dissected a patient with a large epiplocele of the right side, which had been irreducible for fourteen years; the omentum was so enlarged and disorganized, that reduction could not be accomplished until the inguinal canal was divided for nearly three inches. 5th. An epiplocele may be also irreducible from adipose enlargement of the omentum, without any *morbid* alteration of the affected part, and this enlargement may be accompanied with, or independent of general obesity. General evacuation causes a considerable absorption of the fatty matter of the omentum, so as to greatly reduce the size of the tumour, and occasionally to permit its return into the abdomen.

"In irreducible hernia of large size, whether intestinal or omental, the patient is not unfrequently subject to smart attacks of colic, with pains in the tumour, after taking a hearty meal. When the rupture consists wholly of omentum, the pain commences almost immediately after eating, but when of intestine the uneasy feelings are longer in appearing, and seem to take place only when the contents of the intestinal canal are passing through the tumour. Besides these symptoms, an irreducible epiplocele is often accompanied by severe dragging or twitching at the stomach, and by repeated vomitings, in conse-



quence of the stomach being compelled to follow the motions, communicated to the *fixed* omentum, by the intestines and abdominal muscles. These symptoms are also most urgent after meals, because, from the distention of the bowels, the stomach is pushed up towards the diaphragm, and the omentum put more completely on the stretch, and also rendered more convex externally by the pressure of the intestines."

As the stomach and colon become accustomed to the restraint arising from this unnatural fixture of the omentum, we occasionally find that the urgent symptoms gradually diminish, or even altogether disappear; a result, however, of less frequent occurrence, according to Dr. M. than we should be led to expect from the assertions of writers.

"When the distention of the abdomen is moderate, an irreducible epiplocele may cease to produce any disagreeable symptoms; but when the stomach is full, the bowels constipated, and unusually distended with flatus, or fæces, when much straining of the abdominal muscles occurs, we cannot fail to meet with very distressing symptoms. It is the liability of the abdomen and its contents to great and often to sudden variations in size, even in healthy individuals, that enables us to explain the repeated recurrence of these painful paroxysms. They are generally more urgent when the omentum is suddenly, than when it is slowly, put on stretch; yet even in the latter state, they are sometimes marked and severe."

When an inguinal epiplocele has been long irreducible, the omentum sometimes becomes so altered in structure as to produce, by pressure and irritation of the spermatic cord, a diseased state of the testicle, with or without effusion into the tunica vaginalis.

"When an irreducible hernia is complicated with hydrocele," says Dr. M. "it would appear that the usual expedients for the cure of the latter disease cannot always be safely employed. The similarity of structure and contiguity of the affected parts is such, that when inflammation is excited by injection or otherwise for the purpose of producing a cohesion of the tunica vaginalis, it is liable to be propagated to the omentum or its sac, and give rise to alarming symptoms. It is also necessary to consider, before any operation is proposed, that as a præternatural collection of fluid sometimes takes place in the hernial sac itself, which may present all the characters of hydrocele, great caution is requisite in the diagnosis.

"When the omentum is fixed to the sac by extensive adhesions, or when it is neither inflamed nor irritated, it is seldom that any great accumulation of fluid takes place. Sometimes, however, the sac is so much distended, as to prove an additional source of uneasiness to the patient. Pott was repeatedly obliged to puncture the sac and evacuate the fluid, in order to remove the inconvenience arising from the enlargement and weight of the scrotum; and when this was neglected, gangrene was sometimes produced.

"To distinguish, therefore, between hydrocele complicated with an irreducible epiplocele, and a collection of fluid in the hernial sac, is of some practical importance. In the former, the fluid gradually accumulates in the most depending part of the scrotum, and extends upwards, leaving, as in the above case, a separation more or less marked between the two tumours. But, when the accumulation takes place in the sac, the swelling commences below the inguinal ring, and proceeds downwards, unless the hernia is scrotal, when it will begin in the same situation with hydrocele. We may expect, however, to find, when the fluid is confined to the sac, that the tense swelling is greater and higher up in the groin, and that the irreducible omentum is more completely surrounded by it than in the other form of disease."



It is the opinion of some writers, that when the local symptoms of a strangulated epiplocele are severe, and when they seem to depend rather upon inflammation than on strangulation, an operation is generally useless and frequently dangerous. Dr. M. on the contrary, asserts that an operation, even in these circumstances, may be not only necessary, but even highly successful, and he relates a case, which confirms his opinion. The operation will certainly be more successful when the omentum has protruded suddenly and become strangulated by the immediate pressure of the opening through which it has passed; but even when the disease is of long standing and irreducible, the additional size it requires when inflamed or engorged, says Dr. M. may cause over-distension of the hernial aperture, and produce such painful and injurious constriction that an operation may become necessary. In this state the symptoms are less rapid in their progress, but as soon as the tumefaction of the omentum has advanced to its greatest extent, the pressure at the ring may be as considerable, and the stricture nearly as complete as when directly produced by the escape of a larger piece of omentum than the opening can contain.

Dr. M. recommends, in opposition to Hey, Scarpa, Boyer, Richerand, and other writers, that in epiplocele, the adhesions which the neck of the omental rupture may have contracted with the neighbouring parts should be separated and the omentum returned into the abdomen whenever it is practicable.

"By permitting," says Dr. M. "the divided omentum to remain fixed to the neck of the sac, a temporary closure of the aperture will be effected, and the immediate descent of any portion of intestine or omentum for a time prevented. But, on the other hand, besides the danger of the intestines adhering to, or becoming entangled with, this fixed band of omentum, there is the risk of a second hernia forming at the same aperture. When the abdominal muscles are called into powerful action, the fixed omentum serves as an inclined plane along which the intestines glide, and by which the impetus will be more effectually directed to the old hernial aperture, than to any other part of the abdominal parietes; and, of course, the risk of a secondary tumour forming, be greatly increased."\*

The permanent adhesion of the omentum to the inferior hernial openings of the abdomen, sometimes also seriously impairs the functions of the stomach and colon, the organs are dragged from their natural position, and instead of these organs gradually becoming accustomed to this restraint, it frequently happens that the symptoms adduced by it daily become more distressing, and continue to harass the patient with increasing severity during the remainder of life. Several cases in confirmation of this are quoted.

Besides, the disorganization to which the irreducible omentum is liable, is not confined to the tumour, but extends into the abdomen. Dr. M. says that he has seen one case and a preparation of the diseased parts of another, in which the omentum within the abdomen, as well as the portions contained in the irreducible ruptures, had lost every vestige of its natural structure, become exceedingly bulky, indurated, and tuberosc, and produced death by exciting ascites.

Dr. M. has found the use of cold, to an omental rupture, by means of ice, snow, or evaporating lotions, more successful in promoting reduction, than other external applications.

\* In omental hernie, which have existed for years, a portion of gut not unfrequently escapes into the sac, and becomes strangulated.

Sir Astley Cooper once succeeded in reducing an omental inguinal hernia, by applying ice for four days. In robust and healthy subjects, Dr. M. says that cold applications may be continued for days with impunity; but when the patient is old and debilitated, their continuance for a few hours may be sufficient to destroy the vitality of the parts. The effects of cold must therefore be carefully watched by the surgeon.

Before returning the cut omentum into the abdomen, Dr. M. recommends that the bleeding vessels be individually secured, with fine ligatures. Sharp and Pott often returned the divided omentum without applying a ligature, and when the excised portion is small, and not materially changed in structure, little hæmorrhage is to be expected; but when its volume is greatly increased, and morbidly altered, the vessels will be increased in the same proportion, and may require to be tied. They met with two cases where from not having tied the bleeding vessels before the omentum was replaced in the abdomen, hæmorrhage occurred which nearly proved fatal.

Suppuration, although rather uncommon, sometimes takes place in the sac of an irreducible omental rupture. Le Dran mentions a case in which the pus entered the abdomen and proved fatal, and Dr. M. relates another, in which, however, the diseased state was more circumscribed and the result more fortunate.

Some of the older nosologists attempted to point out the prominent and distinctive symptoms of idiopathic inflammation of the omentum, so as to establish the means of distinguishing this disease from peritonitis or enteritis. Dr. M. thinks, however, that we shall seldom succeed in distinguishing the disease during life. It is only when the inflammation commences in an omental rupture, and extends to the abdominal portion of this membrane, that we can correctly ascertain its seat and existence.

Dr. M. states that he has frequently evacuated the fluid of ascites, by puncturing the sac of an old umbilical hernia, not only with safety, but with greater facility, and less inconvenience to the patient, than if the usual situation had been selected, and the practice is sanctioned by Sir A. Cooper.

An omental rupture is liable to be mistaken for a variety of diseases.

“When an intestinal hernia contains solid feces, it presents some of the most prominent characters of an epiplocele. The history of the disease will, however, enable us to arrive at a correct conclusion.

“Hydrocele of the spermatic cord, varicocele, &c. have also some resemblance to an inguinal epiplocele. It has likewise been mistaken for a common hydrocele.

“Adipose tumours are sometimes attached to the sheath of the spermatic cord, immediately exterior to the inguinal ring; but more frequently, they are formed within the abdomen, in the cellular texture which connects the peritoneum to the neighbouring parts, and are protruded through the ring. They thus occupy the position, and possess all the external characters of an inguinal epiplocele; and often render a diagnosis impracticable.

“When small in size, they can be reduced with facility, and prevented from again escaping, by the application of a truss; but when large, or indurated, they continue irreducible, and it is in this state they are likely to engage the attention, and baffle the skill and tact of the surgeon. Pelletan relates, in his “*Clinique Chirurgicale*,”\* several curious cases of such tumours.

“In nearly all the recorded cases, where the adipose tumour originated with

\* Tome III. p. 33, &c. Paris, 1810.  
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the abdomen, the peritoneum was pushed before it, so as to form a sac analogous to a hernia. But, in the only case of this kind, which I have had an opportunity of examining, the tumour was found to have originated in the cellular texture exterior to the peritoneum, close to the outer edge of the internal inguinal ring, and to have descended along the cord, and formed, externally, a large pyriform tumour, without being invested by a peritoneal sac. This tumour, which was irreducible, was supposed to be an epiplocele, although not accompanied by any of the symptoms usually attendant on this disease. This opinion was confirmed by the existence, at the same place, of an intestinal hernia, which could be easily reduced, and retained within the abdomen.

"After death, which was occasioned by pneumonia, the peritoneum was found dragged through the inguinal canal, by the descent and weight of the tumour, so as to form a sac, into which the intestine passed. The appearance of the tumour, when exposed by dissection, and its texture, when divided, so closely resembled the adipo-fibrous degeneration to which the omentum is occasionally subject, as to render it impossible to distinguish between them.

"The nature of the disease was only correctly ascertained, by finding that the tumour was exterior to the hernial sac, and that the omentum was unconnected with the tumour, and occupying the upper part of the abdomen."

The succeeding article, entitled, "*Some considerations with respect to the blood, founded on one or two very simple experiments on that fluid*," by BENJAMIN G. BAXINGTON, M. D., is an extremely interesting one. The principal experiment to which Dr. B. alludes, is the following:

*Experiment I.*—"Let blood be drawn in a full stream from the vein of a person labouring under acute rheumatism, in a glass vessel which should be filled to the brim. By close inspection a colourless fluid will be immediately perceived around the edge of the surface, and after a rest of four or five minutes, a bluish appearance will be observed forming an upper layer on the blood, which is owing to the subsidence of the red particles to a certain distance below the surface, and the consequent existence of a clear liquor between the plane of the red particles and the eye. Let now a spoon previously moistened with water, be carefully immersed into the upper layer of liquid by a gentle depression of one border. The liquid may thus be collected quite free from red particles, and will be found to be an opalescent and somewhat viscid solution perfectly homogeneous in appearance. By repeating the immersion we may collect this fluid in quantity and transfer it to another vessel. That which I employed, is a bottle holding about 180 grains, of globular form, with a narrow neck and perforated glass stopper.

"The solution with which the globular bottle is filled though quite homogeneous at the time it is thus collected, is found after a time to separate into two parts, namely, a clot of fibrine which has the precise form of the bottle in which it was gathered, and a clear serum possessing all the usual characters of that fluid."

This experiment shows that buffed blood consists of only two constituents, the red particles and a liquid, which Dr. B. terms *Liquor Sanguinis*.

It was long ago observed that what is called inflamed blood, coagulates slower than healthy blood, and that the last portions of blood drawn from an animal bleeding to death, coagulated quickest. The following appears to be the immediate cause of a buffed crust.

"The blood consisting of liquor sanguinis and insoluble red particles, preserves its fluidity long enough to permit red particles, which are of greater specific gravity, to subside through it. At length the liquor sanguinis separates, by a general coagulation and contraction, into two parts, and this phe-



phenomenon takes place uniformly throughout the liquor. That part of it through which the red particles had time to fall, furnishes a pure fibrine or buffed crust, while that portion into which the red particles had descended, furnishes the coloured clot. This in extreme cases may be very loose at the bottom, from the great number of red particles collected there, each of which has supplanted its bulk of fibrine, and consequently diminished its firmness in that part. There is, however, with this limitation, no more fibrine on one part of the blood than another."

The above account of the cause of the buffed surface on blood, affords us an explanation of the well known fact that this phenomenon is influenced by the shape of the vessel in which the blood is received. The space left by the gravitation of the red particles, bears a proportion to the whole perpendicular depth of the blood, so that in shallow vessels scarcely any buffed coat may appear, where the same blood in a deep vessel would have furnished such a coat of considerable thickness. Dr. B. moreover asserts that the quantity of crassamentum is also dependant, within certain limits, on the form of the vessel employed. If this be shallow, the crassamentum will be abundant, if approaching in form the cube or sphere, it will be scanty. This difference is owing to the greater or less distance of the coagulating particles of fibrine from a common centre, which causes a more or less powerful adhesion and contraction of these particles. Dr. B. is, we believe, the first to notice this fact, and there are perhaps few relating to the phenomena of venesection, of more practical importance; since blood is said to be thick or thin, rich or poor, in reference to the quantity of crassamentum it contains, and views of a disease are founded on these supposed conditions, which after all depend not on the blood itself, but on the vessel into which it is received.

To obviate the objection which may be urged against a general conclusion drawn from the experiment just alluded to, that it was made upon blood in a diseased state, Dr. B. received some healthy blood in a tall glass vessel half full of oil, which enabled its red particles to settle more quickly than would otherwise be the case. This blood was found to have a layer of liquor sanguinis, which formed a buffed coat, whilst a portion of the same blood received in a similar vessel, having no oil, had no inflammatory crust, as it is called. Hence it appears that healthy blood is similarly constituted as blood disposed to form a buffed crust, the only difference being that the former coagulates more quickly than the latter.

The first experiment also shows that the liquor sanguinis is an uniform homogeneous fluid, and no mere mixture of fibrine and serum, for as already observed, the clot formed by the liquor has the precise shape of the vessel in which it is received; hence the coagulation takes place uniformly from every part of the fluid, and the uniform density of the clot confirms this conclusion.

Dr. B. is also led to believe that fibrine and serum do not exist as such in circulating blood, but that the liquor sanguinis when removed from the circulation, and no longer under the influence of the laws of life, has then, and not till then, the property of separating into fibrine and serum. This separation which may be considered a death of the blood, may, under disease, take place within the body, but never, he thinks, consistently with healthy action.

It follows from these views that there is no such animal fluid as coagulable lymph.

"The liquor sanguinis," says Dr. B. "cannot with propriety be so considered, for it is essentially a fluid, and if under certain circumstances it separates into two parts, only one of these (fibrine) is coagulable, nor can I admit that this one part, considered by itself, previously existed in a fluid state, for in order to its fluidity it was necessary that the two constituents should be so united as to form one compound. There is, therefore, no better reason for affirming, that fibrine exists in a fluid state in liquor sanguinis, than for affirming that muriatic acid exists in a solid state in muriate of ammonia. The salt, indeed, is solid, of which muriatic acid forms one ingredient, but the ammonia is essential to the solidity of the compound. In like manner, the compound is fluid, of which fibrine forms one ingredient, but the serum is essential to its fluidity.

"Nor is it an unimportant error to suppose a fluid secreted from the blood which has the property of becoming converted into a solid, for we are thus led to overlook altogether the fluid portion of the compound with the albumen contained in it, which always forms by far the greater portion of the secretion."

The fact of circulating blood consisting of a homogeneous liquor and red particles, has led Dr. B. to the belief that when an effusion of serum takes place, we shall generally, in some neighbouring part, find a corresponding deposition of fibrine. Dr. B. does not believe that serum is a secretion intended for the lubrication of closed membranes, but says that such belief is a fallacy founded on appearances observed after death, which do not exist during life.

"When we recollect," says he, "how quickly the separation of liquor sanguinis into serum and fibrine takes place out of the body, we ought not to be surprised to find, though it be but a few minutes after death, or even before it, if dissolution be gradual, a serous effusion into cavities which, during health, could not be destined to contain any fluid.

"I doubt the fact, however, that such membranes have the power during health of secreting serum, by which term I mean a fluid essentially containing albumen; or that any thing more passes from them than an aqueous halitus, or vapour; and I therefore doubt the propriety of giving them the denomination of *serous* membranes. Under morbid defect of vitality they may and do suffer serum to exude from them containing more or less albumen, and in such cases we shall usually find effused into some neighbouring part the corresponding fibrine, which with the serum in question went to form the liquor sanguinis. Such membranes may pour forth the liquor sanguinis itself, in which case we shall find the separation to have taken place in the cavities which they line. Gelatinous masses will gravitate to their lowest parts, or flakes, or shreds of fibrine will be diffused through the fluid.

"Wherever this gelatinous formation exists, it is owing to the presence of fibrine, since, as is well known, albumen never assumes a gelatinous form, under the ordinary temperature. We may indeed with albumen, when mixed with water and heated, exactly imitate this appearance of fibrine, and form substances of all degrees of gelatinous consistence; but this only serves to confirm the belief that fibrine, in a diluted state, may put on a gelatinous appearance on coagulation. I have stated that closed membranes may pour forth serum or liquor sanguinis. They may also, under high excitement, pour forth blood itself. There is, therefore, no better reasons for calling such membranes *serous*, than for calling them *fibrinous* or *sanguineous* membranes. The secretion of each is morbid, and we ought not to designate parts from the morbid actions which may be set up in them."

The examination of fluids effused into closed cavities, throws much light upon this subject, and Dr. B. has offered several illustrations derived from that source. These are scarcely susceptible however of analysis, and our limits will not permit us to insert them entire.



Before closing our notice of this interesting paper, we must allude to the great resemblance between liquor sanguinis and chyle. The principal difference indeed existing between them is the red particles in the former, which it is evident are not derived from the latter, and that we must seek for their formation in some of the viscera connected with the circulation. The spleen has been looked upon as their secreting organ, and it may be interesting to state, that Dr. B. has examined with the most accurate and powerful microscopes the blood of a dog, whose spleen had been removed several months previously, and on comparing it with that of a healthy animal, it did not appear deficient in the quantity of its red particles. •

The third article is on the symptoms attending the change of a circumscribed popliteal aneurism into the diffused state, with some particulars of an aneurism of the aorta which burst into the œsophagus. The author of this paper, SAMUEL COE ESQ., Esq. is of opinion that there are certain particulars relating to the change of an aneurism from the circumscribed into the diffused state, which require greater attention than they have yet received, and that without this attention the obscurity sometimes prevailing in the diagnosis will be the occasion of many errors in practice.

“It is not enough,” he says, “to be informed, that when the aneurism becomes diffused, its pulsations are reduced, or stopped, and the limb painful, with an alteration in the shape of the swelling, coldness of the foot, and a sensation, experienced by the patient, of something having given way in the limb. Frequently, there is rather a complaint of numbness, than of pain; and if the aneurism be large, the compressed and altered state of the popliteal nerves, and the effect of distention on the branches of the cutaneous ones, will fully account for the general torpidness of the whole leg. With respect to a sudden change in the shape of the swelling, whether this symptom occur or not, will depend upon the situation of the opening formed in the sac, the extent and place of the extravasation, and the degree of œdema affecting the integuments. If the sac give way at a superficial point under the skin; the blood be effused in considerable quantity; and the limb be not already much enlarged from the œdematous state of the integuments; there will of course be a very manifest alteration in the shape of the swelling, and an evident and sudden extension, or increase of it. But, in the opposite conditions, that is to say, when the sac bursts at a very deeply seated point, when the blood is consequently injected into the cellular membrane between the muscles, and under the fascia; and when the integuments are already considerably thickened and swollen; a vast quantity of blood may be extravasated, without any remarkable change in the figure of the aneurismal tumour, or any very palpable increase in the tension and magnitude of the leg. As for the patient’s having felt something break, or give way in the limb at the moment when the sac burst, it is a kind of information not constantly to be obtained, because the rupture is sometimes very limited at first, or may happen during sleep; and when the sensation is declared to have been experienced, little reliance can be placed upon the account, inasmuch as patients, with popliteal and other external aneurisms, frequently complain of cramp, and sudden attacks of extraordinary feelings in their limbs, without any change of the disease from the circumscribed into the diffused form.

“When the sac of an aneurism has burst in the foregoing manner, the propulsion of blood into it from the heart, can evidently no longer have the effect of producing a full and sudden distention of it, as more or less of that fluid will



either escape from it into the cellular membrane, or collect in one mass out of the original sac. Sometimes, however, when the breach in the sac is under a certain size, the pulsations do not completely stop at first; their strength is only reduced; and several days may elapse before there is a total cessation of them. Now, unless we suppose, that the opening in the sac enlarges after its first formation, and that the subsequent decline and stoppage of the throbbing of the tumour, can be explained on this principle, we must look into other circumstances for an elucidation of this interesting fact.

"In a case of the preceding description, several causes combine to render the pulsations weaker and weaker, and at length to extinguish them.

"1st. The more or less impeded state of the circulation, that takes place in the limb, as soon as a considerable quantity of blood has been injected into the cellular tissue. And, in order that the extravasation may attain the degree necessary for the full production of this effect, a certain time is obviously requisite; the limited size in the opening of the sac, and perhaps also sometimes the particular situation of it, away from the main current of blood, preventing the effusion from becoming all at once copious and extensive. By degrees, however, the quantity of blood in the cellular membrane increases; and then its pressure not only creates a great deal of irritation, but actually interferes with the regular supply of blood and nervous influence to the limb. Hence, the alarming fall of temperature in the foot, and the well known tendency to gangrene, consequent to the change of a circumscribed popliteal aneurism into a diffused one.

"2dly. Another cause, that has a powerful effect in gradually putting an end to the pulsations, is the increase in the quantity of coagulated blood and fibrine in the sac; the inevitable result of the stream of blood through it becoming more and more retarded, in proportion as the obstruction of the circulation in the leg is augmented."

Mr. Cooper illustrates these remarks by a very interesting case of popliteal aneurism, in which there was a rupture of the sac without any change in the shape of the tumour, diminution of its firmness, or material increase in the swelling of the leg; gangrene resulted, and amputation of the limb became necessary.

In popliteal aneurisms of considerable size, there is always peril in delaying the application of a ligature to the femoral artery; for although there may be no immediate danger of the skin giving way, and of the patient losing his life by hæmorrhage, the sac is apt to burst, and the disease to change from the circumscribed into the diffused state, with all the disadvantages and risk inseparable from the latter condition.

"By delay we suffer the muscles of the knee to become permanently injured in their organization; a prodigious sac to be formed, which will require a great length of time to be diminished and absorbed; the popliteal nerve to be converted into a thin expansion, not resembling its original structure; the popliteal vein to be obliterated; and the condyles of the femur and head of the tibia to be in part destroyed by the pressure of the disease."

The most remarkable points in the case of aneurism of the aorta, is that the basis of the scapula was displaced by the aneurismal tumour, and that the patient lived nearly eight weeks after a communication had been formed by ulceration between the aneurismal cavity and the œsophagus, and followed the laborious occupation of a wheelwright during a considerable part of this time.

In the ninth volume of the Society's transactions, a case is recorded of axillary aneurism in which the subclavian artery was secured above the clavicle, by

the late Professor Post of New York, the first we believe of the kind in which the operation succeeded. In the thirteenth volume of the same work a similar case, in which that operation was successful, is related by Mr. Key, and in the volume now under notice, two cases are given in which the operation has been attended with equally fortunate results, one by Mr. Crossing of Devonport, the other by Mr. Mayo.

Mr. Crossing's patient was a stout, muscular man, forty-six years of age; the tumour was situated immediately under, and closely in contact with the right clavicle, extending to the cartilage of the fifth rib, stretching into the axilla, and over the point of the shoulder. It has a very tense, elastic feel, and the pulsation is generally rather obscure, but at other times is so distinct as to be seen at a considerable distance from the patient. The tumour is not compressible, but the pulsation can always be stopped by pressing on the artery above the clavicle. The arm from the shoulder to the extremities of the fingers is swollen to an enormous size; is benumbed, and has lost all power of motion. The pulsation at the wrist cannot be felt; and the arm is kept nearly at a right angle in consequence of the magnitude of the swelling in the axilla, the pectoral muscle and integuments covering it being stretched to the greatest extent. He is always in pain, and at times to a most agonizing degree; is unable to lie back in the bed, but is continually in a sitting position, with the arm supported on a pillow, and the body bent forward. His countenance is marked with great distress.

The operation was performed June 23d, 1830, in the following manner. The patient was seated in an arm chair, the head directed to the left side. The integuments over the clavicle being stretched upon the chest, Mr. C. commenced his incision near the sternal attachment of the mastoid muscle, and cut freely on the bone for about three inches and a half, thus dividing at once the integuments and platysma myoides. The parts being now allowed to retract, left the lower margin of the incision half an inch above, and running nearly parallel with the clavicle, and exposed the jugular vein to a considerable extent, which was easily drawn aside and kept out of the way with a blunt hook. The cervical fascia was next carefully divided from the clavicular edge of the sternocleidomastoideus to near the extremity of the wound, which brought into view the omo-hyoideus. This muscle instead of forming a triangular space, as it does in most instances with the scalenus anticus and clavicle, ran in a line with and just above that bone. Finding this rather unusual course of the omo-hyoideus an impediment, Mr. C. passed a director under and divided it. The knife was now laid aside, and the remaining part of the operation finished with the fingers and a common director. Some loose cellular membrane, and a large fatty gland being removed, the artery was found immediately below this substance, and three considerable branches of nerves passing over the vessel, and in close contact with it. These were separated, and the ligature passed under it, and tied in a double knot. One end of the ligature was cut off close to the artery, the other left hanging from the wound, the edges of which were now brought together, and secured with one suture and adhesive straps. Nothing very remarkable occurred during the progress of the cure—the ligature was retained until the eighty-fifth day. On the 28th of December following, the



man's health is stated to be perfectly good, the circulation free and perfect throughout the limb, and nothing left of the tumour but a little thickening in the sac of the aneurism, along the edge of the pectoral muscle. There remains, however, some want of strength and sensation in the limb.

The gland described as existing in this case immediately over that part of the artery which was tied, Mr. C. thinks would prove a better guide in this operation than the scalenus muscle. Mr. C. thinks that this gland will usually be met with; he says, that in not less than a dozen subjects whom he has examined, it was found precisely in the same situation.

The subject of Mr. Mayo's case was an athletic man aged forty-nine. The tumour was seated beneath the left clavicle, was four or five inches long and three in depth, and caused violent gnawing pains about the shoulder, breast, and back, from the irregular distention it occasioned of the axillary plexus of nerves. The operation was performed on the 26th of March, 1831, and is thus described:—

“Drawing down the skin of the neck, I made an incision about three inches and a half in length on the surface of the left clavicle, extending from the insertion of the sterno-cleido mastoideus muscle to the clavicular portion of the trapezius; by this the platysma myoides was exposed, which, as well as the subjacent fascia, I carefully divided, for upon the latter many branches of the external jugular vein were found, several of which I was obliged to divide in the progress of my dissection through the cellular substance, and secure them with ligatures. I traced the edge of the omo-hyoideus muscle, traversing the upper part of the wound, and directly below it I could place my finger on the artery as it passed over the first rib, which seemed to be about an inch and a half or two inches from the surface; to this point I directed all my attention, and endeavoured to clear my way to the artery by cautious touches with the edge of the scalpel, and by tearing the cellular substance with its handle, and with a director, till at length I was able to get my nail upon the rib and then under the artery, so that after various efforts I passed a common blunt aneurismal needle under it, armed with a strong round ligature, and having ascertained that nothing else but the artery was included in the ligature, I tied it with a double knot, drawing each knot tight with the iron rings invented by the late Mr. Ramsden. The subclavian vein appeared just within and below the superior border of the clavicle, but formed no impediment to the operation; the branches of the external jugular, however, were very annoying, and kept the wound continually filled with blood, and the apprehension of wounding larger branches limited the extent of the internal wound to two inches at most. He bore the operation with great courage, though with some impatience, as it occupied rather more than twenty minutes; the pulsation ceased, and the pains in the shoulder were much relieved.

The ligature came away on the eighteenth day, and on the 2d of May the wound had completely cicatrized, the tumour had quite disappeared, and the arm was recovering its strength, but the pulse was not to be felt at the wrist.

Dr. JOHN VEREN, in a brief communication, extols the effects of tobacco as a local application in gout and other cases of constitutional inflammation. Dr. V. says that this article is capable of alleviating in a great degree, and sometimes altogether arresting various forms of specific inflammation, particularly rheumatism and gout, and that in this last disease it also assists the parts most materially in recovering their tone and strength. He adds that it is also a valuable applica-



tion in all cases of erysipelatous inflammation, and that the only precaution to be attended to, is not to apply it to any part contiguous to the stomach, unless the production of nausea be at the same time desirable. He equally recommends it in acute migratory inflammation, attacking the testicle or sclerotic coat of the eye. Dr. V. employs the infusion made according to the London Pharmacopœia, and in many cases he says it will be well to rub the part with eau de cologne, after the use of the tobacco.

The history of a case, in which, on examination after death, the pancreas was found in a state of active inflammation, by WILLIAM LAWRENCE, Esq. constitutes the seventh article. This case is interesting, both from the circumstance of morbid changes in the structure of the pancreas being extremely rare, and also because it connects the symptoms and progress of the affection with the morbid changes which were produced.

The subject of this case was a lady, twenty-one years of age, who, about the fifth or sixth month of her pregnancy, lost her usual healthy appearance, and gradually became pallid, but without feeling unwell. About a month previous to her confinement, she had a severe attack of catarrh, with very little fever, and which yielded to the usual remedies. The morning on which her labour commenced, (the 29th of January,) she looked and felt extremely exhausted. The presentation was natural, the pains returning at pretty regular intervals, and she was delivered of a healthy child. The placenta was expelled by the contraction of the uterus five minutes afterwards, and she did not, during the whole labour, lose two ounces of blood. The night after her labour was passed without pain; she was tolerably tranquil, but got little sleep. It was evident on the third day after her delivery, that although the labour was comparatively easy, she had suffered much from the exertion. She felt so exhausted that she was constantly calling for sal volatile to smell, and occasionally to take internally, in order to prevent fainting: she sighed deeply and frequently. The least attempt to raise her head from the pillow produced a violent beating in the temples, but it subsided after a few minutes of perfect quietude. Her pulse was feeble and irritable, at about eighty-six beats in a minute. The bowels were rather relaxed.

Her state and symptoms were like those of persons who have lost large quantities of blood; and her medical attendant considered that there was a defect in the process of sanguification. Under this view of the case, which was adopted by a physician who saw her soon after her confinement, cordials and stimuli, both medical and dietetic, were resorted to. No advantage resulted from this plan, and another physician was called in, who recommended calomel and opium, on the idea that inflammation had taken place in the chest, and that effusion had probably been the consequence. Mr. L. saw her about thirty-six hours before death, when no hope of recovery could be entertained. She was excessively pale, with a rapid, feeble pulse, hurried breathing, some fulness and uneasiness on the right side of the abdomen.

Mr. L. says that he afterwards learned that this lady had been most singularly troubled by thirst during her pregnancy, and that her mother, alarmed by her drinking cold fluids in large quantity, had represented to her that she feared

the circumstance might prove injurious to the child. She had also suffered much from pain in the epigastric region, which was sometimes so severe as to oblige her to retire to her own apartment. In mentioning this circumstance, her mother drew her hand across the abdomen in the seat of her daughter's sufferings, and she pointed exactly to the situation of the pancreas.

She however declared to her physicians, who attended during and after her confinement, and who examined her abdomen several times to discover if there was tenderness there, that she felt neither pain nor soreness on pressure.

*Examination thirteen hours after death.*—"The body had not lost its heat; the internal parts were warm to the touch. The skin was universally and extremely pale. No blood escaped on making the incisions necessary for exposing the abdomen and thorax and for sawing round the skull.

"The membranes lining the abdomen and thorax, and the viscera contained in those cavities, excepting the pancreas and spleen, were extremely pale and almost bloodless. The appearance was like that observed in persons who have died of hæmorrhage, or under the state described by the term *anæmia*. The liver and kidneys were pale, and the several portions of the alimentary canal quite white, without any traces of blood in them.

"The heart was pale and rather large; its cavities and the contiguous large vessels contained some fluid of watery consistence, about the colour of red wine, and small portions of soft coagula. The coronary vessels contained no blood. The muscular substance of the heart was pale and rather flaccid: the structure of the organ in other respects was natural. The lungs were healthy, except that frothy fluid escaped on cutting into their posterior part. The cellular texture around the pancreas and duodenum, the great and small omentum, the root of the mesentery, the mesocolon and the appendices epiploicæ of the arch of the colon were loaded with serous effusion. The fluid, which was transparent, bright yellow, and of watery consistence, ran out in large quantity on cutting into the parts above mentioned, which were distended in some places to the thickness of two or three inches.

"The pancreas was throughout of a deep and dull red colour, which contrasted very remarkably with the bloodless condition of other parts. It was firm to the feel externally; and when an incision was made into it, the divided lobules felt particularly firm and crisp. The texture was otherwise healthy. The part was left wrapped up in a cloth for nearly forty-eight hours after its removal from the body, the weather being then very cold. At the end of this time the hardness was gone, and the gland even appeared rather soft.

"The spleen was rather large and turgid, livid externally, brownish-red internally, and somewhat soft in texture.

"The surface of the dura mater, covering the cerebral hemispheres, was lined in the neighbourhood of the falx, with a very thin, soft, and almost mucilaginous layer of light red tint; it could be scraped off with the handle of the knife, leaving the membrane of its natural appearance. There was slight serous infiltration of the pia mater. The blood-vessels of the brain were moderately full. The distention of the cellular membrane by serous effusion in this instance was analogous to the œdematous swelling which often occurs round other parts when actively inflamed.

"The pancreas is not unfrequently found after death, as it was in this case, preternaturally hard; and I suppose that the gland has been in this state in the numerous instances, in which we hear and read of its having been scirrhus. Although I do not know on what this hardness depends, I have never considered it as a morbid condition; because it occurs in individuals who have died of other diseases, without any symptoms referable to the pancreas; because the structure of the part is perfectly healthy in all other respects, and because the hardness soon disappears after death, as it did on this occasion."

The volume concludes with some pathological and practical researches on uterine inflammation in puerperal women, by ROBERT LEE, M. D. We shall make this the subject of a special article in a future volume.

XVII. *A Treatise on Indigestion, with Observations on some painful complaints originating in Indigestion, as Tic Douloureux, Nervous Disorder, &c.* By THOMAS J. GRAHAM, of the University of Glasgow, and of the Royal College of Surgeons, London, &c. First American, from the last London Edition, revised and enlarged, with *Notes and an Appendix, containing Observations relative to the Modes of treating Dyspepsia*, lately adopted and recommended by Dr. AVERY, Mr. HALSTEAD, and others. By an American Physician. Philadelphia, Key & Mielke. Oct. pp. 206.

The fruitful topic furnished by dyspeptic ailments, has, we think, been very judiciously treated in this volume of Dr. Graham's. The author's attention is not only directed to the best curative means, but to the exposition of the erroneous views that have been heretofore too generally inculcated in regard to certain affections often complicated with indigestion. He dwells particularly upon the two most prominent errors of the day, namely, the mistaking severe disorders of the stomach and intestinal canal, for disease of the liver, and the employment of large doses of mercurials for the cure of supposed liver complaints. He wishes to be understood as not inveighing against the proper use, but only against the *abuse* of mercurials, this last being an evil of magnitude in British practice, and we think there is reason to believe, of still greater extent in that of America.

Dr. Graham maintains that the maladies generally denominated "*liver and bilious complaints*," proceeding from a supposed disordered condition of the liver, are not in any degree so frequent or so formidable as disorders of the alimentary canal. This he thinks sufficiently demonstrated by enlightened anatomists whose numerous and close dissections were not instituted for the purpose of serving any particular views or doctrines. The investigations of Louis, Broussais, Andral, Abernethy, Howship, Marshall Hall, &c. are adduced in support of the correctness of his opinions. Whilst upon the subject of the fallacious character of the symptoms ordinarily reckoned the certain indications of disease in the liver, he gives us the following account of a late eminent British practitioner.

"The late Dr. James Curry, (*de mortuis nil nisi verum*,) whose book on biliary concretions, together with his mode of practice, operated greatly in making diseased liver, and its supposed remedy, calomel, so very fashionable and fatal, was so wedded to his notions on this subject, that in his patients, *invariably*, the liver was considered the real source of all their ailments; and if, when labouring under stomachic irritation and disorder, they complained of pain in the left side, in the region of the stomach, he would endeavour to persuade them they were mistaken, and that it certainly was in the right! If he could not bring them over to this belief, it was his custom to say, 'Ah, I shall bring it there then!'"

He subsequently informs us in another part of his treatise, that the same Dr. Curry was in the habit of putting his hand to his right side, and saying, he was assured there was a very small portion of liver left there.



"Some might think," observes Dr. Graham, "it was not wise in him to make so frequent a confession of this kind, since, if a man could live for years in tolerable health, (which was his case,) with only a very small portion of liver, and that probably in a state far from healthy, the conclusion generally drawn from thence would be in no small degree unfavourable to the doctor's opinion, of the supreme importance of the healthful actions of this viscus, and of the absolute necessity of resorting to the free use of calomel in its derangements. However, he was totally mistaken in his own case, for after death the liver was found to be quite sound! a circumstance not much in favour of his discriminating powers. Yet authors are not wanting, who speak of the practical success of this physician, attributing it to his superior acquaintance with hepatic disorders. To me, this success and discernment appear equally problematical."

Dr. Graham distinguishes four different kinds of disorders of the digestive organs, each having its seat principally if not exclusively in a particular organ, though one species or variety seldom exists for any length of time, without producing an unfavourable change in the neighbouring parts. In one variety the stomach is the seat of the affection, in another, the small intestines are involved, in a third, there is faulty or deficient biliary secretion, whilst in the fourth, the large intestines are most affected, the derangement existing there being sometimes the single cause of much local and general disturbance and distress. These, one and all, exert an immediate tendency to prevent the regular and perfect digestion and assimilation of the food.

The discriminating symptoms of each of these varieties are pointed out with great distinctness, and after this we have the causes and treatment of indigestion successively dwelt upon with great ability. The views entertained by Dr. G. in relation to the pathology and treatment of indigestion differ essentially from those of most writers upon the subject, and we regret that we have not space in our bibliography for even such a sketch as might gratify the general inquirer.

An ample appendix by the American editor adds some of the latest intelligence relative to dyspeptic complaints. The treatises particularly noticed are "the Dyspeptic's Monitor," "Abercrombie on Diseases of the Stomach," &c. and Mr. Halstead's "New method of curing Dyspepsia." The productions of the two New York authorities, Dr. Avery and Mr. Halstead, are examined at considerable length, and the mechanical process constituting the new method of the latter, very accurately described. G. F.

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XVIII. *Remarks on the History and Treatment of Delirium Tremens.* By JONAS WANE, M. D. Fellow of the Massachusetts Medical Society. Boston, 1831. pp. 61. 8vo.

This interesting and well written treatise appears to have been originally published in the Transactions of the Massachusetts Medical Society, a work we have not had an opportunity of seeing, but which is an important addition to our medical literature if its contents tally with the specimen before us.

The subject of delirium tremens has necessarily attracted much attention from practitioners, and especially from such as are attached to public institutions, in which unfortunately there are but too frequently cases of this disease, and we offer no apology to our readers for again drawing their attention to it, being

fully convinced, to use the words of our author, "that every subject in science, and more particularly, every subject in a science of a nature so peculiar as that of medicine, requires not only careful and repeated observation, but the careful and repeated observation of many individuals, in order to its thorough illustration."

Dr. Ware has had ample opportunities of studying the disease in question, as he states that his remarks are deduced from nearly one hundred cases, of which seventy-seven occurred in private practice, and the remainder in the Boston Alms-house; these were cases in which the disease was fully developed, as he does not include that far greater number of instances of incipient disease so common among drunkards. In his appreciation and treatment of these cases, Dr. Ware, we are glad to perceive, has followed the dictates of his own judgment, instead of blindly following one or the other of the favourite modes of cure. Most writers on this disease seem to think that although no two cases are precisely similar, that these differences need not lead to any corresponding difference in the mode of treating them; the result of Dr. Ware's observations has led him to a belief, that what are considered as the most peculiar and prominent symptoms, are not those which are really of the most importance, but that the practitioner is to be as much governed by the general situation of the patient, the character of his attack, and the state of his constitution, as in other diseases. As is well known to every one that has seen much of this complaint, the susceptibility of drunkards to it is exceedingly various; in some it occurs on the slightest derangement of their functions, whilst in others the severest attacks of disease may take place without it making its appearance; nor does it appear to depend on the degree of indulgence in spirituous liquors, or the period of time during which they have been used. At the same time, as is remarked by Dr. Ware, those who become intemperate early in life are more subject to it than those who acquire the habit gradually, and have not used spirituous liquors to excess until they have reached maturity.

Dr. Ware combats the common opinion, that delirium tremens is in most cases immediately occasioned by an abstinence from ardent spirits, and states, that in a large proportion of instances this had nothing to do with it. This agrees with our own experience; as we have seen numerous cases in which the disease appeared in the midst of the most excessive indulgence, as well as under the other circumstances to which he alludes. It may make its appearance suddenly, or be ushered in by a train of premonitory symptoms, of various degrees of violence, and is peculiarly liable to occur in those drunkards who suffer from irritability of the stomach and frequent vomiting. We are sorry that our limits will not permit us to extract the entire account given by the author of the progress and termination of an attack of delirium tremens; it is admirably and graphically drawn up, but is too long for insertion, and would lose its peculiar merits by condensation; we therefore pass to Dr. Ware's descriptions of the several circumstances, states of the system and disease, in connexion with which the delirium makes its appearance. 1st. "As the immediate consequence of a particular excess, or of a succession of excesses, in individuals not otherwise disposed to disease." This form is very common, and is vulgarly known under the name of the "horrors," and it is these cases, according to our author, that have led to the opinion that the disease was capable of being

treated with equal success by the most opposite remedies; this inference, he thinks, unfounded, as it will equally subside of itself unaided by art. 2d. It occurs "as the consequence of habitual intemperance, without being occasioned by any particular or extraordinary excess." Cases of this kind are much more severe and dangerous than the preceding, and are usually attended with more derangement of the gastric organs. 3d. Attacks of delirium tremens also occur "in connexion with other regularly-formed and well-marked diseases, or else as the consequence of injuries." In these cases it often comes on when the patient is convalescent from the primary disease, or when he is only apparently convalescent. In all the above instances, the delirium assumes the form of a regular paroxysm, terminating in sleep; but this is not always the form it assumes; when supervening on other diseases, it may present many anomalies, both in its course and symptoms.

Dr. Ware next gives a particular history of its principal symptoms; these are delirium, watchfulness, and tremor, of which the first is the most universally and constantly present; we cannot follow in detail this part of his treatise, for reasons already stated, but two or three of his remarks require to be noticed; thus, he justly observes, that an important distinction may be drawn between the watchfulness and tremors, as characteristics of the disease, "that the former occurs only in this affection, whilst the latter makes its appearance in all cases of sickness among drunkards, and is even common in many who are in their usual health." Besides these leading symptoms, others take place of more or less importance, as convulsions, some unnatural sensation in the head, variation in the pulse. "There is nothing peculiar in the state of the tongue; it is commonly preternaturally clean, red, and tremulous; but this appearance is common in diseases of drunkards." It is sometimes covered with a thin white coat, and more rarely thickly encrusted. "In general, we may regard the tongue as rather indicating the general state of the system, than the state of the disease itself." We notice Dr. Ware's opinion on this point the more particularly as the foulness of the tongue is considered by the advocates of the emetic plan of treatment as one great indication for their use. The appetite usually fails; thirst is seldom excessive; the skin is generally soft and moist from the first, and towards the close of the disease it is bathed in sweat.

"Morbid anatomy has thrown no light on the nature of that affection of the brain and nervous system, which gives rise to the peculiar symptoms of delirium tremens. Indeed, its history would rather lead us to expect, that these symptoms do not depend on any organic changes discoverable by dissection, but merely on a disturbance in their functions." In the treatment of these cases, Dr. Ware observes, that we should constantly keep in view:—"1st. By what measures may we prevent an attack of delirium tremens when it is threatened? 2d. By what measures may we arrest or alleviate the paroxysms, or carry the patient in safety through it." As regards the first of these inquiries, an attack, he says, is to be prevented by the judicious use of such general measures as will be spoken of in treating of its management. On the second question he dwells at some length, especially as to whether it is absolutely necessary to procure sleep by the assistance of art; on the benefit of natural sleep there is no difference of opinion, but authors are not so unanimous as to the paramount importance of this state when artificially produced. Dr. Ware him-



self inclines to the belief, that this artificial sleep is not so necessary as has been supposed, and that even in many of those cases where it is said to have been beneficially induced, it did not actually take place sooner than it would have done in the natural course of the disease. "I am satisfied, therefore, that in cases of delirium tremens, the patient, so far as the paroxysm alone is concerned, should be left to the resources of his own system, particularly that no attempt should be made to force sleep by any of the remedies which are usually supposed to have that tendency." We invite the attention of practitioners to Dr. Ware's arguments on this head, and although we do not agree with him as to the inefficacy of narcotics, we are ready to admit that he has staggered our belief in their absolute utility; and we have long agreed with him, that the ratio of success by the *expectant* plan has been nearly, if not fully as great as by the stimulant, or rather the narcotic.

Dr. Ware's own mode of procedure may be thus summed up. When the attack is preceded by acute disease, the course which is most likely to relieve the original affection, is most likely to prevent the delirium, or at least to make it milder. In the treatment of the delirium itself, blood-letting is of great utility when properly timed, and employed with judgment, but is by no means to be indiscriminately resorted to in all cases. Local is more universal in its adaptation than general bleeding, and in fact may be beneficially employed in a majority of instances. Emetics are useful in all cases where the digestive organs are deranged, not to hasten the accession of sleep, as at first proposed, but for their effects on the general state of the system. No particular advantage arises from purging to any extent; it is, however, desirable that the bowels should be kept open. Blisters, though reprobated by many practitioners, have been found useful in some cases. The general course to be pursued is thus detailed by Dr. Ware:—

"Where we are satisfied that the delirium is the immediate consequence of the excessive use of liquor in an individual previously in good health, no medical treatment is necessary. If the patient be left to himself, and be debarred from ardent spirits, the attack subsides spontaneously. In the worst cases no medicines can be required beyond a dose of salts, and an infusion of valerian, of wormwood, or of hops. In those cases which are preceded by some general derangement of the system without any well-defined disease, our course is to be determined by the nature of the derangement, and the state of the constitution. Where the patient is robust and vigorous, more particularly where in such a patient there has been convulsions, or severe pain in the head, general bleeding should be freely adopted, and is the most important remedy. In almost all cases, let the constitution be what it may, local bleeding may be regarded as beneficial, if not indispensable; and it is particularly called for, where there is dizziness, pain in the head, or much flushing of the countenance, with heat in the head or face. When the digestive organs have been long in a deranged state, especially when the stomach appears to be loaded with a mass of secretions which are offensive to it, and which excite it to ineffectual vomitings, a powerful emetic is of essential benefit. This may be followed by a cathartic of calomel, either combined with, or followed by some other article which will promote its full operation. It is afterwards only necessary to regulate the bowels by mild laxatives, unless some unusual symptoms arise which indicates a more active evacuating treatment."

Dr. Ware is of opinion that the common practice of allowing spirituous

liquors during an attack, is incorrect. The diet should consist of nutritious liquids. As little restraint should be exercised over the patient as is consistent with propriety and safety; patients should never be intrusted, especially during the night, to females alone, as they frequently require to be restrained from acts of violence on themselves.

The treatment after the paroxysm has nothing peculiar, and the convalescence is generally rapid.

It will be seen by the above sketch, that Dr. Ware's plan of treatment differs from the generality of modes proposed, being however more allied to the expectant than to the others. We recommend an attentive perusal of his paper to the advocates of the stimulant school, as showing that equal advantages may be obtained without the use of narcotics, &c.

R. E. G.

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XIX. *Treatise on the Excision of Diseased Joints.* By JAMES SYME, Surgeon, &c. p. 163. 8vo. Plates V. Edinburgh, 1831.

The object of this work is to recommend the practice spoken of in the title, which seems to have been very successful, at least in Edinburgh, for out of seventeen cases of excision of the elbow-joint performed there, only two have terminated fatally, of which, one the author believes would have died from any operation whatever, while in the other, the disease was found so extensive as to render excision almost impracticable.

The considerations which give to this operation an advantage over that of ordinary amputation, are less ultimate hazard to the life of the patient and the preservation of the limb.

"The advantages of amputation are, that it quickly, easily, and effectually removes the disease; but these are balanced by the serious objection of its depriving the patient of a limb; and it may be added, that, though this operation cannot now be regarded as attended with much danger, it is certainly not by any means free from it. To say nothing of the ordinary bad consequences of amputation, I must here particularly notice the risk of inflammation and supuration of the lungs, or other internal organs, which renders the result of amputation for caries so unsatisfactory, especially in hospitals. Every one who has attended the Hotel-Dieu, must have remarked the frequency of death, or rather the rarity of recovery after the removal of limbs in such circumstances; and though the evil seldom goes to such an extent in other places, I am sure all practical surgeons must be familiar with it. It is also observed that adult patients who have suffered amputation for caries, often fall into bad health, and die of dropsy or some other chronic complaint within a year or two after the operation. These bad effects seem referable with most probability to the disturbance which is excited in the system by taking away a considerable part of the body; but, whatever be the true explanation of them, there can be no doubt as to the fact of their occurrence, which ought to be carefully remembered in making the comparison that is now attempted.

The great recommendation of excision is, that it saves the patient's limb; and the benefits accruing to him from this are so important and conspicuous, that unless the objections which can be urged against it, should appear after mature consideration to be very serious indeed, we ought not to hesitate in giving it the preference. These objections so far as I have been able to ascertain, are the following:—*First*, The difficulty of the operation. *Second*, Its danger. *Third*, The useless condition of the limb in which it has been performed."



Our author asserts with much confidence, founded on his experience, that even in old cases of diseased joints, when the sinuses are numerous, the texture of the surrounding parts much vitiated by suppuration and the effusion of serum, together with a synovial membrane converted into a thick, gelatinous substance, yet the operation is effectual.

He remarks, that—

“ With regard to the cartilage, it might be expected that no harm could result from leaving any part of it that remained sound; but here too the judgment of theory is reversed by experience, since it has been found that when any portion of the articulating surface was left, the disease required a subsequent operation. The cause of this is probably to be referred, not so much to any morbid process in the cartilage itself, as in the synovial membrane lining it, and in the spongy bone immediately subjacent, which has its tendency to morbid action excited by the injury sustained in its neighbourhood. The operation, therefore, essentially requires the removal of the whole cartilaginous surface.

Lastly, as to the bone, one not acquainted with the pathology of the osseous tissue, who examined the bones of carious joints after maceration, might be apt to suppose that the diseased part could not be removed without sacrificing so large a portion of the whole as to render it useless and unworthy of preservation.” Mr. S. gives a representation in his work of an elbow-joint, which he amputated before adopting the plan of treatment now under consideration. In this the bones are much increased in thickness to a considerable distance from the articulation, and their surface in the whole of this extent is covered with irregular warty excrescences, which give it a rough tubercular appearance. “ When these tubercles are examined more particularly, they are found to consist of a compact osseous substance, which is smooth on the surface, and perforated with numerous apertures for the transmission of blood-vessels. This is new bone, and perfectly healthy in its actions; it resembles in all respects the callus, or new osseous substance, which effects the reparation of fractures, and is thrown out in consequence of the irritation of the disease. The truly morbid or carious portion of the bone occupy merely the articulating surfaces. The external shell of the spongy bone is removed by the disease, and the cancelli are exposed to view, presenting a rough surface composed of rigid plates and spicula, which are white and more brittle than usual, so as to seem as if they had been subjected to the action of fire. The depth to which the bone is thus affected varies considerably, according to the origin of the disease. When the morbid action commences in the synovial membrane or cartilage, it is generally superficial; but when the inflammation is primarily seated in the substance of the spongy bone, as in the third kind of white swelling which has been mentioned, then, as has been already stated, the substance of the bone is more deeply affected, being often excavated into a hollow, which is carious over the whole of its surface. The extent of this cavity seldom, or rather never exceeds the bounds of the epiphyses, except sometimes in young subjects, where the bone has been widely altered by scrofulous action, previous to suffering the inflammation which more immediately occasions the caries. From not distinguishing between the truly diseased bone and that effused in consequence of its irritation, it appears that a much larger portion has been taken away in some of the cases of excision hitherto published than there was any occasion for. Less than a half of the portions of the humerus and femur which were removed by Moreau and Crampton, I should certainly think, so far as can be judged from the evidence of their drawings, would have been sufficient for the purpose, in which case it is plain the limbs would have been much less shortened and weakened, and the magnitude and consequent severity of the operation diminished. As already stated, the caries seldom goes beyond the epiphyses, which are all the part of the bone that the surgeon requires to



remove except in the rare cases where the bone is found to be more extensively affected; and in these it will probably be most prudent to perform amputation."

Mr. Syme considers that in regard to the hazard of this operation, it is much inferior to that from a wound inflicted on a sound joint, and that the effect of it is rather to allay than to increase irritation, for patients have been observed to sleep better the night after the operation, than for a long time previously.

"It has been said, that after the joint is cut out, the bones must either unite together, so as to render the limb rigid and unserviceable, or, if it remain moveable, the attachments of the muscles having been separated, it must be no less unfitted for use by its flaccidity and want of subjection to voluntary motion. With regard to the first of these events, I think it cannot be denied that ankylosis of the shoulder or elbow, provided the other joints remained entire, so far from rendering the limb useless, would not prevent many of its usual actions, and certainly not to the extent of permitting it to be compared, in respect of utility, with an artificial substitute. But it has been ascertained by the sure decision of experience, that true ankylosis or osseous union does not occur generally or even frequently in these circumstances; indeed, I feel authorized to say, not without very great attention on the part both of the surgeon and patient in favouring its accomplishment, particularly in preserving absolute rest; but when no such precautions are used, the union is established by means of a tough, flexible, ligamentous-like substance that permits the bones to be used with more or less freedom, according to the exercise which they are made to undergo during the process of healing. And the voluntary motion, though at first impaired, or altogether lost, owing to the relaxation of the muscles, which is caused by the approximation of their attachments, necessarily resulting from the shortening of the bones, gradually returns, and ultimately becomes as strong as ever. What seems to occasion the greatest difficulty in conceiving the possibility of recovering voluntary power over the new joint, if joint it may be called, proceeds from inattention to the fact, that muscles or tendons, when cut away from their attachments, fix themselves to the parts on which they come to rest. Thus the muscles of a stump adhere round the bone, so as to enable the patient to use it with force and freedom; and when amputation is performed through the tarsus, the *tibialis anticus* and extensors of the toes fix themselves so as to counteract the extensors of the heel. Independently of theory, however, we have here the more satisfactory assurance of positive facts; and the cases related below, will, I trust, be considered sufficient evidence to show that it is possible to save limbs by excision of diseased joints, nearly, if not altogether, as useful as before they suffered from disease.

"In addition to the arguments against excision which have now been considered, it has also been objected that the operation affords no assurance against a return of the disease, but as this objection applies equally to amputation, it need not be taken into account."

Mr. Syme recommends for this operation a long, narrow scalpel, which is to be thrust at once into the joint so as to open it freely; the parts covering the bones are then to be dissected up the proper distance, by keeping as near as possible to the bones, so as to leave the tendons and muscles. The bones are then to be sawed through with an amputating saw, which he thinks the most convenient instrument; it is, however, sometimes better to finish the division of them with the bone pliers. The hæmorrhage, though free in the beginning, seldom persists so as to require the application of ligatures, but occasionally the latter are indispensable.

"The next part of the process is to place the edges of the wound in contact and retain them together, which is best effected by the interrupted suture, unless the integuments should be so very soft as to give way under the pressure of the threads, in which case compresses of lint must be used in their stead. It is always of most consequence to unite the edges of the transverse incision, if there is one, since, if they do not heal by the first intention, they are afterwards brought together with very great difficulty, and the broad cicatrix which results from their separation is very adverse to the mobility of the joint. Some compresses of lint ought to be applied over the flaps, and then the limb being placed in a proper position, that, namely, in which it will most frequently be required after the cure is completed, it ought to be enveloped with a long roller, which affords the requisite support much better than splints or rigid cases of tin or pasteboard.

"The constitutional disturbance, for the reasons already stated, is usually very slight, and requires nothing more than some gentle purgative or slight antimonial, with spare diet and rest. The pain is usually severe for the first five or six hours, but then subsides, and seldom proves troublesome afterwards. The dressings ought to be changed ten or twelve hours after the operation, by which time the oozing of blood and serum will be at an end; and then also any inequality or gaping of the edges may be rectified by slips of sticking-plaster. Union by the first intention sometimes takes place through nearly the whole line of incision, except where old sinuses exist in its course; more frequently the adhesion is only partial and the wound opens out more or less widely, according to the degree of local inflammation, and the distention caused by blood contained within its cavity. In the course of a few days, the discharge, which was at first copious and offensive, begins to diminish; all the clots of blood issue from the wound; the swelling subsides; and the favourable change is altogether so sudden and satisfactory, as to surprise those who are not accustomed to witness the operation.

"During the cure, every means is to be employed either to keep the limb perfectly quiet, to favour ankylosis, or to exercise it in the degree and extent of mobility which will be required of it. The wound is generally very nearly healed in the course of a few weeks, but one or more sinuses continue to discharge for months or even a year or two. Small portions of bone also occasionally come away; but if the surgeon has done his duty in the first instance, he need not be under any apprehension on these accounts; and the patient will be too well pleased with being freed from the pain of his disease, and having regained the use of his limb, to feel annoyed by the trifling inconvenience which he thus experiences."

After these general observations, Mr. Syme gives a narrative of the cases where he has applied successfully this operation to the shoulder, the elbow, the knee, and the foot, the details of which it is not necessary to introduce here. Some of the recoveries were certainly of the most gratifying kind, and highly honourable to the science of surgery.

We present in extenso his methods of operating on some of the joints, as it would be difficult to give an abstract of them with justice to the author.

In the case of the shoulder, he says—

"I believe that the best way of bringing the bones completely within reach with least injury to the soft parts, is to make a perpendicular incision from the acromion through the middle of the deltoid, nearly to its attachment, and then another shorter one upwards and backwards from the lower extremity of the former so as to divide the external part of the muscle. The flap thus formed being dissected off, the joint will be brought into view, and the capsular ligament, if still remaining, having been divided, the finger of the surgeon may be passed round the head of the bone, so as to feel the attach-



ments of the *spinati* and *subscapular* muscles, which can then be readily divided by introducing the scalpel first on the one side and then on the other. After this the elbow being pulled across the forepart of the chest, the head of the humerus will be protruded, and may then be easily sawn off while grasped in the operator's left hand. The subsequent part of the operation will be conducted on the principles already explained, and as it is of course desirable to preserve as much mobility as possible, no means should be used to restrain motion further than are necessary for preventing irritation and displacement. The *pectoralis major* and *latissimus dorsi* tend to draw the extremity of the bone inwards, but this may be easily prevented by placing a cushion in the axilla."

In the operation on the elbow, he recommends the patient lying with his face downwards, on a sofa or table.

"It is always right to take away the whole of the sigmoid cavity of the ulna, which comprehends the olecranon and coronoid processes, together with the head of the radius and extremity of the humerus as high as its tuberosities. More than this, for the reason just mentioned, need not be removed; and a smaller portion would not include the whole of the cartilaginous surface, none of which, according to the general principle already explained, ought ever to be allowed to remain.

"The easiest way of accomplishing this, is to remove the olecranon in the first place; then to cut the lateral ligaments of the joint, so as to free the extremity of the humerus, and saw it off; lastly, to detach, by means of cutting-pliers, the head of the radius, and the remaining part of the sigmoid cavity. The reason for not separating at once the whole of the ulna that requires to be removed is, that, in case it is divided below the insertion of the *brachialis internus*, its removal becomes extremely difficult. Having experienced this inconvenience in one of my first cases, I have since always proceeded as has just been described, and never found any difficulty in detaching the coronoid process after gaining the free space that was afforded by removing the olecranon.

"A simple longitudinal incision will not give sufficient access to the joint to allow of its excision, even in a sound state of the parts, much less when they are thickened and preternaturally adherent, as in cases of caries. An additional transverse cut was therefore proposed by Mr. Park, intersecting the other at right angles; but this plan labours under the double objection of splitting the triceps, and not permitting free exposure of the humerus. A method still more objectionable, on the ground of unnecessarily injuring the muscles, is to make a longitudinal incision, and two transverse ones at its extremities, so as to form two lateral flaps. By far the best plan that has yet been contrived, is that of Moreau; and though it may appear at first sight complicated and destructive to the soft parts, it is really the easiest and least injurious that can be imagined." In making the transverse cut, which should be close above the olecranon, the ulner nerve is apt to be wounded or divided; and though the facts mentioned below make this injury appear of very little consequence, as there can be no advantage in inflicting it, the surgeon ought to use the precaution of ascertaining the situation of the nerve before introducing the knife. The thickening of the limb is sometimes not so great as to prevent the nerve from being felt, but more frequently its situation can be discovered only by recollecting its position relatively to the bones; it lies close to the inner edge of the olecranon, and will certainly be cut if the transverse incision is prolonged further than this towards the internal tuberosity of the humerus. The surgeon, therefore, ought to feel for the olecranon, and introduce his knife close to its upper surface, with the back turned towards its inner margin, but somewhat nearer its radial side. Having thrust the knife down into the joint, he ought to cut transversely, with a sawing motion, so as to insure the division of the tough tendinous parts, until he arrives at the radial tuberosity of the humerus. He may then make the longitudinal incisions, which



should extend about an inch and a half upwards and downwards, without any danger whatever, as the oblique course of the nerve recedes from the line of division. Both flaps should be dissected previously to commencing the excision of the bones, and it is thus rendered much easier than when the exposure is confined to the part that is to be first removed. The hæmorrhage is generally profuse immediately on the incisions being made, but soon diminishes, and seldom persists to such extent as to require the application of a ligature; on the principle already stated, however, it is right to secure any vessel, however small, that threatens to continue to bleed. In those rare and perplexing cases, where the ulna is diseased below the coronoid process, and requires to be divided through its shaft, the interosseous artery is very apt to be divided, and must, of course, be tied. As to the humeral artery, it is always perfectly safe, being protected from injury by the whole thickness of the *brachialis internus*.

"There is a great variety in the difficulty which is experienced in performing this operation in different cases. The adhesions are sometimes so general and so firm that no way can be made without the knife; while, at other times, the suppuration has, as it were, already dissected the bones, so that the surgeon, after making his incisions, has little to do but to apply his saw and pliers for their removal. When the operation is concluded, the edges of the wound are to be stitched together; the limb ought to be half bent, and a long roller applied in the figure of eight to give it proper support."

In the operation on the knee—

"The patient being laid on his back, the surgeon should rapidly divide the integuments and other parts exterior to the joint, so as to open its cavity, and remove the patella. Having next cut the lateral ligaments, he may readily protrude the extremity of the femur, and saw off as much of it as seems necessary. He has lastly to take away the diseased part of the tibia, which can now be done very easily, by passing the knife round the head of the bone, so as to detach its connexions, and then sawing off a slice of the requisite thickness.

"During this process, the popliteal vessels may seem to be in danger, but really are not so—as the insulation of the bones is not performed until the ligaments which connect them together are divided, and no longer oppose their being separated from each other, so as to be more distant from the vessels. There is not much bleeding, but one or two of the articular branches may require to be tied. After the operation, a great difficulty has been experienced in bringing the limb into a straight position, owing to the contracted state of the flexor muscles, which still prevent extension, notwithstanding the relaxation that is afforded by shortening the bone. In this case, the surgeon must be satisfied with placing the limb on a double inclined plane, in as good a position as can be obtained by moderate force, exerted through the means of paste-board splints. In a few days it will be found that the tension gradually diminishes, and before long allows the leg to be completely straightened.

"During the cure it does not seem proper to insure absolute rest, in order to obtain a true ankylosis or osseous union, since the very long bone that would thus be formed, besides being extremely inconvenient to the patient, by rendering the limb perfectly rigid, could not fail to expose it to a great risk of fracture, by affording long levers to forces acting at the extremities. A great degree of flexibility, on the other hand, would unfit the limb for support and progressive motion, so that, while perfect immobility and free motion ought to be avoided, a slight degree of flexibility ought to be promoted. The chief difficulty of the cure consists in preventing the tendency to bend outwards, which is always strong, and, if not counteracted, most injurious to the appearance and usefulness of the limb. The best mode of opposing this distortion consists in the careful application of splints."

We have thus presented to the reader some of the most valuable features in this publication; the operation recommended has been so seldom performed in this country, that though we cannot advocate the practice upon personal experience, yet we think it worthy of candid consideration.

XX. *Practical Observations on Prolapsus of the Rectum.* By FREDERICK SALMON, F. R. C. S. &c. &c. London, 1831. pp. 105, 8vo. Plates IV.

Prolapsus of the rectum, notwithstanding its frequent occurrence and painful character, has not attracted the particular attention of the profession. This may have arisen, as is suggested by Mr. Salmon, not from a want of inclination on the part of practitioners to acquire a proper knowledge of the subject, but rather their inability to obtain it, owing to the meagre accounts of it usually presented in medical writings, and to the disinclination of patients to declare its existence till fully developed, thus precluding all opportunity of studying its different stages. We were therefore glad to see the announcement of the work whose title we have given, trusting that it would supply us with such information on the subject, as would prevent our approaching this disease with distrust and uncertainty. In this expectation, we have not been disappointed, and Mr. Salmon is entitled to the thanks of the profession for the physiological manner in which he has considered the disease in question, grounding his observations on the only true basis, practical experience. Something is even gained by his denominating the complaint what it in reality is—prolapsus of the rectum; and not prolapsus ani, a name which involves a contradiction of terms.

As the work may not fall into the hands of many of our readers, we will give as full a view of the author's facts and opinions, as is compatible with our limits. He first gives a sketch of the healthy and morbid anatomy of the rectum. On the first, as he offers nothing new, we shall not dwell, except in noticing the following observation:—

“The external and internal coats are connected by cellular tissue. When the rectum has suffered from long-continued irritation this uniting medium is so much increased, that in extreme instances it forms an artificial coat between the mucous and muscular portions of the bowel. From the same causes, the internal coat of the intestine participating in the irritation, becomes thickened and elongated, so that its folds, anatomically denominated the columns of the rectum, are materially increased in size. Now both these are usually produced before any extensive prolapsus of the bowel occurs.”

The mucous coat of the rectum, which is continuous with the fine skin lining the sphincter, is also more or less elongated in the early stages of prolapsus, sometimes only protruded on the discharge of the feces, whilst at others it forms pendulous flaps, which become larger when they are irritated. As the disease advances, the natural appearance of the parts is wholly changed, and an irregular fleshy mass makes its appearance on any exertion of the abdominal muscles. In this state, its appearance varies very much, both in form and colour, giving rise in some cases to a suspicion of cancer.

The author divides the causes of prolapsus into constitutional and local; among the most common of the first of which is costiveness. The presence of accumulations of fecal matter in the rectum, not only is a cause of general and local irritation, but also by the distention they cause, induce a permanent elongation of its mucous membrane. Prolapsus may also arise from the opposite state; the violent straining attendant on diarrhoea, not only causes a distention of the sanguineous vessels of the intestines, but also induces chronic inflammation, and the thickening already spoken of. This disease may also arise



from a deranged condition of the liver, and such cases are distinguishable by the colour of the prolapsus, which presents a bluish appearance from the engorgement of the minute hæmorrhoidal vessels. It may likewise be caused by indigestion, general debility, want of due attention to diet, &c. A very fruitful source of it, is a sedentary employment, hence its prevalence among females. It may also be brought on by a protracted and violent action of the abdominal muscles, as hard riding, parturition, &c. The local causes are, any circumstance preventing a free evacuation of the rectum, as piles, calculus, &c.; in children, worms are a common source of it. It may result from local injury to the bowel; from a morbid condition of the external sphincter ani; but the most usual cause of the disease is a contraction of the gut itself, which not only offers a permanent obstacle to the action of the intestine, but also prevents a free return of blood through the part. Mr. Salmon next details the symptoms of this distressing complaint, and observes, although when in its confirmed state, they are clear and decisive, it often happens that they are so obscure at first, that the patient is not aware of the existence of the disease, attributing his difficulty in passing his evacuations to costiveness, and hence resorting to purgatives; but this difficulty soon increases, and a sensation of distention just within the sphincter is experienced, discharges of blood now begin to make their appearance, and the disease is pronounced to be piles. At this time the patient also experiences pain in one or both hips, extending to the lower extremities, being particularly felt across the insteps, or in the calves of the legs. Before long, any attempt to evacuate the bowels, causes acute pain at the sphincter, with a sensation of something protruding, which retires on the cessation of the effort, and excites but little attention, till a portion of it becomes strangulated, and requires to be returned. In this state patients will go on for a great length of time before applying for medical assistance. After this the disease rapidly increases, and becomes excessively painful, and from its magnitude prevents the passage of the smallest evacuation without acute agony; and at last will descend on the slightest exertion, or even spontaneously, so that it is obliged to be retained within the sphincter by mechanical means.

- In the succeeding chapter the author takes up the treatment, and observes, that our first object should be to remove or mitigate the disease without a recurrence to an operation. Our success in this, however, will depend on the cause of the affection. If it has arisen from general causes, and is unconnected with any local derangement, the cure may often be effected by very simple means. Thus, the patient must be interdicted from any recreation or employment likely to have occasioned the disease. Attention must also be paid to the condition of the stomach and bowels, and care taken that the quantity of food be moderate, and that none of an astringent nature be allowed, especially rice, high-seasoned meats, crude vegetables or fruits, as well as fermented liquors, and excessive indulgence in wine. In the management of the bowels, although costiveness should be scrupulously guarded against, no medicine ought to be administered of an irritating character, as the drastics, and more especially aloes; on the contrary, the purgatives chosen should be of the mildest character, and given in the smallest possible dose. The state of the liver is not to be overlooked, as in most cases of chronic prolapsus of adults, the functions of this viscus are more or less at fault; hence this organ must be restored to a normal



condition by venesection or local blood-letting, and alterative doses of mercury. If the digestive functions are impaired, we may recur to some of the bitters combined with small doses of the alkalies. Daily exercise on foot or in a carriage is indispensable; when the latter is used, a seat of cane net-work, or an air cushion should be used, as it is of the utmost consequence to prevent any determination of blood to the parts. As regards the local treatment, Mr. Salmon gives ample instructions, which we shall cursorily notice. He is highly in favour of a proper use of enemata, but at the same time protests against the habit of employing large injections on every trifling occasion: he says that the quantity should not exceed a pint, and even half this will often suffice. He prefers the gum elastic bottle and pipe to any other instrument for this purpose. Astringent washes are useful in the first stages. Leeches to the anus are very beneficial, especially where the liver is disordered. The use of opiate suppositories, or sedative lotions to the orifice, are also very useful in relieving the irritability of the sphincter. In the ulcerative stage, chloride of lime, in the proportion of half a drachm to a pint of water, a third of which is to be used night and morning as an enema, will lessen local irritation and correct the offensive odour of the discharge. Bandages are often required as a local support, where the removal of the tumour is contra-indicated. The most essential point is to ascertain whether there is not a diminution in the calibre of the intestine, as if this exists, any attempt to cure the prolapsus will be useless. This contraction does not always exist near the orifice; in fact, prolapsus can scarcely take place when the latter is the case, as there will not be sufficient mucous membrane below the stricture to be protruded. The state of the rectum ought to be examined in every case of prolapsus, as this examination can never be productive of any possible injury.

Mr. Salmon next enters on the consideration of the various operations required in the cure of prolapsus, the first of which he notices is division of the sphincter; this must be resorted to when the muscle is so strong as to become a permanent obstacle to the function of the bowel. This state of things, it is true, may sometimes be remedied by the use of the bougie or the plug, but permanent relief is only to be expected from a division of the sphincter. This may be done either by a simple incision, or by the removal of a triangular portion of it. Where the muscle is narrow the first is sufficient, but when it is very broad, the latter should be had recourse to.

To ensure the success of the operation, we must be cautious not to allow the wound to heal from its edges, and in order to prevent any contraction after its cicatrization, a plug should be occasionally introduced. We cannot give the mode of operating as the author refers to plates of instruments invented by him for the purpose. The next surgical operation spoken of, is the removal of the tumour. For this purpose he infinitely prefers excision to the use of ligatures, as being more certain and less painful, the only objection to it being the danger of hæmorrhage, and this he thinks he is able to obviate by a plan devised by himself, which he says has been eminently successful. It is as follows—the patient being placed in a proper position, one or more long pins are to be passed from above downwards transversely through the basis of the tumour, to prevent the return of the intestine after the operation is performed. The prominent parts of the tumour are then to be seized by a hook or forceps and drawn

gently to the opposite side, and with one stroke of the scissors, the part is to be removed as deep as the division between the mucous and muscular coats; the latter must be left entire, or there will ensue a permanent difficulty of evacuating the bowels; all the protruding portions are to be thus taken off. Any material bleeding is to be checked by cold, &c. The pins are to be left for an hour or two, to permit the blood to coagulate in the extremities of the divided vessels, before the bowel is restored to its natural situation. When they are removed, the rectum is to be returned within the sphincter in the gentlest manner. The after treatment is perfect rest, liquid and rigid diet, &c. The recovery is generally rapid, not requiring more than a week or ten days. Sometimes, however, a ligature is obliged to be adopted; this should be of the finest silk, and should be passed as is recommended by Dr. Rousseau, of this city, in cases of hæmorrhoids, through the tumour, so as to divide it into two or more parts. The ligature is much more apt to create local and constitutional mischief than is caused by excision, and is not as likely to give permanent relief.

Mr. Salmon next makes some observations on that common disease, the *proidentia recti* of infants. This is to be combated by astringent lotions and a proper bandage, and care taken to prevent costiveness, though the author with great truth, reprehends in the strongest manner the prevailing custom of purging children on every occasion. This plan will not always relieve the prolapsus, as it may be occasioned by worms, which are to be expelled by the usual means. Mr. Salmon speaks favourably of injections of spirits of turpentine.

A number of cases illustrative of the different forms of the disease are related.

R. E. G.

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XXI. *An Essay on the use of Nitrate of Silver, in the cure of Inflammations, Wounds, and Ulcers.* By JONAS HIGGINBOTTOM, Nottingham, Member of the Royal College of Surgeons of London. Second edition, much improved and enlarged. London, 1829. pp. 204. 8vo.

The observations of Mr. Higginbottom respecting the therapeutic properties of nitrate of silver, are not only exceedingly interesting, but also possess, in several respects, the merit of novelty, and we shall therefore lay a pretty full account of them before our readers. We have had ourselves little experience with the remedy employed in the mode recommended by our author, his essay, by some accident, never having reached us until a few weeks since, but are disposed however to place much confidence in the facts related by Mr. H., his experiments having been extensive, and apparently conducted in a proper spirit; and although something must of course be allowed for the zeal and enthusiasm of a discoverer, and Mr. H. appears to consider the nitrate of silver as a real panacea, still little doubt can be entertained but that it is a valuable remedy in many local diseases in the treatment of which it had not been previously used, or had been improperly applied.

Mr. H. protests at the very commencement of his work against the application of the term *caustic* to the nitrate of silver, since he says instead of destroying, it frequently preserves parts which would inevitably stough except for the extraordinary preservative powers of this remedy. The principle then upon which Mr. H. sets out, is that nitrate of silver possess the property of *subduing*

external inflammation, and to effect this in some cases, it is sufficient merely to blacken the cuticle; in others it is necessary to induce a degree of vesication, which is however less irritable than that caused by cantharides, and in others to produce an adherent eschar. As to the *modus operandi* of the remedy, the author affords us but little light; his object, however, he states is simply to ascertain and state practical facts, and in this we shall follow him.

When it is desired to produce vesication with the nitrate, the part must be first washed with soap and water, and dried; then again moistened, and a long stick of nitrate of silver be passed a few times over, not only every part of the inflamed skin, but also the surrounding healthy skin to the extent of an inch or more beyond it, in severe cases. The part is to be exposed to the air to dry, and is to be kept cool. In twenty-four hours, if the nitrate of silver has been properly applied, it will be frequently observed that the inflammation has subsided, and its progress checked; but if there be any inflamed spot left untouched, the patient will complain of it. To every such spot the nitrate of silver must be applied. At this period there is usually a little vesication. On the third day there is generally more vesication and less swelling, and the patient complains of a little pain, as that of a blister; but the part on pressure has a puffy feeling, and is found to be quite free from inflammation. On the fourth day the vesications begin to disappear, the exuded fluid drying in crusts, which should be allowed to drop off spontaneously. On the fifth day these crusts separate, leaving the subjacent parts free from soreness and inflammation. It is sometimes a number of days before the whole of these crusts peel off, but it is best to leave them undisturbed.

It is not, however, as a remedy in external inflammation alone, that Mr. H. extols the nitrate of silver; he states in general terms that it is equally useful as a means of inducing the healing process or adhesive inflammation, in recent wounds, whether incised, punctured, or bruised. In incised wounds he says that union by the first intention is frequently secured by the application of the nitrate of silver on the surrounding cuticle—in punctured wounds union is promoted, and suppuration prevented—in bruised wounds, the action of the parts is so modified that their texture is often preserved unbroken, and sloughing which would otherwise inevitably have taken place, obviated. In neglected punctured wounds, attended by ulceration, pain, swelling, and fungous growths, and in cases in which there would have been destruction of the parts, as in deep-seated inflammation of the finger, the nitrate of silver has a most decided effect in checking the inflammation, in preventing that destruction of parts, and in inducing the healing process. In ulcers which are rapidly spreading, attended with severe and extensive inflammation, this remedy has frequently an immediate effect in subduing the inflammation and in inducing the healing process. In those cases of inveterate and obstinate ulcers of the legs which have been for years unhealed, attended by sleepless nights and painful days, the nitrate of silver, applied under peculiar regulations, has extraordinary powers in relieving the pain and inducing sleep, even from the first time of its application; and eventually in healing the ulcers themselves, and effecting a more firm and durable cicatrix than any other mode of treatment.

For the attainment of these various objects, Mr. H. applies the nitrate of silver in three different modes; 1st, to form an adherent eschar; 2d, when this is



impracticable to produce an unadherent eschar; and 3d, when neither of these can be effected, the use of the nitrate is combined with that of an emollient poultice.

The remedy is employed in the first method indicated, upon the principle that wounds and ulcers infallibly heal, whenever an eschar made over their surface, can be preserved adherent.

"To the surface of the wound the eschar supplies a complete protection and defence, and allows the healing process to go on underneath, uninterruptedly and undisturbed. It renders all applications, such as plasters, totally unnecessary, as well as the repeated dressings, to which recourse is usually had in such cases; and it at once removes the soreness necessarily attendant on an ulcerated surface, being exposed to the open air. In many cases, too, in which the patients are usually rendered incapable of following their wonted avocations, this mode of treatment saves them from an inconvenience which is to some of no trifling nature."

Mr. H. lays great stress upon the importance of preserving the eschar adherent, and avoiding all causes which might detach its edges. To secure this adherence more effectually, he protects the eschar by covering it with gold-beater's skin. It is applied by simply moistening the skin surrounding the wound by a drop of water, and then applying the gold-beater's skin over it and the eschar, to which it soon adheres firmly, and from which it may be at any time removed by again moistening it for a moment with water.

"In this manner, in cases in which there would be much and long-continued irritability and pain, as in superficial wounds along the skin, all this suffering, and its consequence in disabling the patient, are completely avoided. A blush of inflammation forms around the eschar, but this gradually subsides without any disagreeable consequences, and the inflammation which would otherwise have been set up, is entirely prevented by the due formation of the eschar. In my earlier experiments I observed this fact; but since that time I have always applied the nitrate of silver on the surrounding skin, and beyond any inflammation which might be present, or which might supervene."

The advantage of healing by eschar, over that by scabbing, as employed by John Hunter,\* Mr. H. asserts to be very decided, and that he has found by comparative trials, that whilst the scab is irritable and painful, and surrounded by a ring of inflammation, the adherent eschar becomes totally free from pain and inflammation, and that whilst the scab remains attended by inflammation and unhealed, the eschar is gradually separating, leaving the surface underneath completely cicatrized; finally, that the plan of healing by eschar is infinitely more certain, and more speedy, than that by scabbing. We can say nothing of this from our own experience; but it appears to us that the nitrate of silver must act in such case principally by coagulating the discharges from the wound, and thus securing the formation of a crust, which unassisted nature does not always effect; and no one can for an instant doubt the superiority of this method over that employed previous to the time of John Hunter, viz. the application of balsams and a farrago of stimulants.

In recent injuries, and in very small ulcers, attended by little inflammation, the eschar is generally adherent; in other cases, it is too apt to be unadherent,

\* See his work on the Blood, &c.

arising from the formation of pus, or of a scab underneath. If pus forms, rendering the eschar unadherent, which may be determined in the space of twenty-four hours, a small incision is to be made into the centre of the scab, with any sharp-pointed instrument, the fluid gently pressed out, and the nitrate of silver then applied to the orifice thus made. The same plan is to be adopted if the fluid ooze out at the edge of the eschar; it is to be fully evacuated by pressure, and the orifice is to be touched with the nitrate of silver. If the eschar be very large, and there are several cavities with pus, it may be necessary sometimes to make several small incisions in an eschar, but the healing process goes on best when the orifice thus made is in the centre of the eschar. In this manner, the eschar is occasionally rendered adherent; but more frequently the fluid requires to be repeatedly evacuated, and this should be done once a day, taking care that the eschar be not needlessly separated by allowing the fluid to accumulate. If the eschar be accidentally separated before the ulcer is healed, Mr. H. advises the nitrate of silver to be applied anew. At length the eschar becomes adherent, and in due time it peels off, leaving the surface healed.

When the purulent matter is allowed to remain too long under the eschar without being evacuated, a scab forms underneath the eschar, this is attended with pain and inflammation, the eschar does not separate but remains long over the sore, and there is no appearance of healing. In this case, the whole must be removed by the application of a cold poultice for two or three days, which removes the eschar and allows the inflammation to subside, after which the nitrate of silver must be reappplied. The gold-beater's skin is even more necessary, as a protection to the unadherent than to the adherent eschar, the former being more liable to be torn off than the latter.

Mr. H. does not recommend this treatment in all cases indiscriminately; on the contrary, he says that it is improper to employ the nitrate of silver, with a view of healing by eschar, in large ulcers, or wounds which do not admit of the formation of a complete eschar, or where the ulcer or wound is so situated as to render it impossible that the eschar should remain undisturbed, as between the toes, unless, indeed, the patient be confined to bed.

In such cases Mr. H. recommends the application of the nitrate of silver, and then a poultice, and this from day to day according to circumstances, until at length, by the subsidence of the inflammation, and the cicatrization of the ulcerated surface, the case may admit of the formation of an adherent eschar, and of the final healing of the ulcer. This plan he says he has found particularly useful in neglected punctured wounds attended by ulceration, pain and swelling, recently-opened abscesses, and in neglected deep-seated inflammations of the fingers. In these cases, he says, it is not only necessary to apply the nitrate of silver to the surface of the sore, but in every cavity or orifice which may be formed by the disease, and also on the surrounding inflamed skin, repeating it as may be necessary. By this mode the pain and swelling are much subdued, and a free issue is secured for the secreted fluid, and Mr. H. has never seen the original inflammation increased by it.

Mr. H. next exemplifies more particularly the beneficial effects of the remedy in several forms of external inflammation, in punctured and bruised wounds, ulcers, and lastly in burns and scalds. The external inflammations to which Mr.

H. considers the nitrate of silver applicable to, phlegmon, whitlow, erysipelas, and inflammation of the absorbents.

In slight cases of whitlow, the application of nitrate of silver over the inflamed part will often prevent suppuration, but when this has already taken place, the abscess should be freely opened, the nitrate of silver applied well within the cavity, and the part then enveloped in the cold poultice and lotion. When the inflammation returns, the application must be repeated, but this is said seldom to occur.

In slight cases of erysipelas of the face, Mr. H. resorts first to every active constitutional means of cure, and if these fail he then has recourse to the nitrate of silver rubbed over the moist skin, in the mode already described, and always it is stated with the result of subduing the cutaneous inflammation, alleviating the pain and heat, preventing sloughing, and relieving the constitutional symptoms. General antiphlogistic measures are, however, to be continued.

In inflammation of the absorbents, Mr. H. applies the nitrate of silver to the ulcer or wound in which it originates, and slightly over the surrounding inflammation, along the course of the inflamed absorbents, and on the surrounding skin wherever there is any swelling.

In recent punctured wounds, Mr. H. directs the orifice to be first examined, and if there be any loose portion of skin closing this orifice, it is to be removed by a pair of sharp-pointed scissors, or by a lancet: the puncture and surrounding skin are then to be moistened with a little water, and the nitrate of silver is to be applied within the puncture until some pain be experienced, and rather lightly, so as not to occasion vesication, to the skin, for an inch round the puncture; and to a greater extent even, if the swelling exceeds that space: the part is then to be exposed to the air. It does not appear necessary to apply the nitrate of silver deep in the puncture; and it would occasion unnecessary irritation. In this manner, says Mr. H. it is astonishing how completely the terrible effects of a punctured wound are prevented. The eschar, indeed, frequently remains adherent, and the case requires no further attention.

"At a later period after the accident," he continues, "when the puncture has been neglected, some degree of inflammation is usually present, the orifice is nearly closed with the swelling, and a little pus, or fluid, is formed within: a slight pressure will evacuate this fluid. The nitrate of silver may then be applied within the puncture, and over the surrounding skin beyond the inflammation, and must be allowed to dry. In this manner we frequently succeed in forming an adherent eschar, and in subduing all the inflammation. If there be any vesication, it may be simply left to nature: the fluid is soon absorbed or evaporated.

"If there be reason to suppose that an abscess has formed deeply, it must be opened freely by a lancet, and the nitrate of silver is then to be applied within the cavity; a poultice of bread and water, and cold water as a lotion, are then to be applied over the whole. The application may be repeated every second or third day, if the swelling or inflammation require it, and the cold poultice may be renewed every eight hours. I have several times applied the nitrate of silver over an inflamed surface, in cases where I was not aware that suppuration had taken place. Even in these instances an immediate check is given to the surrounding inflammation, and relief to the pain; but if two or three days there is an increase of swelling, attended by some pain, which is not usual, except when there is matter, or some extraneous body, underneath. In these



cases, I make a free incision with the lancet, and apply the nitrate of silver, and a cold poultice.

"In cases of puncture, where the orifice is healed, and where an erysipelatous inflammation is spreading, attended with swelling, I have applied the nitrate of silver freely over and beyond the inflamed parts, to form an eschar; and I have had the satisfaction of finding that the inflammation has been arrested in its progress, and has shortly subsided.

"This mode of treatment is particularly useful in cases of punctured and lacerated wounds from various instruments, such as needles, nails, hooks, bayonets, saws, &c. and in the bites of animals, in inflamed leech bites, in the stings of insects, &c.

"The dreadful effects of punctures from needles, scratches from bones, of wounds received in dissection, and of other similar injuries, are often totally prevented by these modes of treatment. I have for the last seven years had frequent opportunities of trying them in these cases, and have the most perfect confidence in their success.

"In considerable punctured wounds, where an adherent eschar cannot be formed, the nitrate of silver may be applied to the lips of the wound, and over the surrounding skin for several inches, so as not to induce vesication, and the edges of the wound may be brought together by sticking plaster, as in healing by the first intention. This mode of proceeding prevents the excess of inflammation and consequent suppuration, and the wounds have healed nearly as by the first intention."

In some cases where the common mode of pressure by sponge and adhesive plaster cannot be used to stop the bleeding of leech-bites, Mr. H. says it may be effectually stopped by the firm application of the point of a stick of nitrate of silver within the little orifice, continued for a short time. Mr. H. also states that this application to leech-bites, as soon as they have done bleeding, will cause an adherent eschar, and prevent that irritation and erythematous swelling to which some patients are subject. Where there is great inflammation also, several days after the application of leeches, it is quickly subdued by the nitrate of silver, and irritable sores following the application of leeches, heal readily by eschar.

In the treatment of bruised wounds, Mr. H. urges the early application of the nitrate of silver, and states in bruises of the skin he has in every instance effected a cure by the adherent eschar, if this application was made early, unless the skin had been in an unhealthy and discoloured state from previous ulcerations, or in old persons in whom the skin was tender from exposure to the fire, or in whom there was considerable œdema. The difficulty, however, of forming an eschar is always increased by delay. When the patient applies too late after the accident to prevent the formation of a slough, and the slough itself is superficial, Mr. H. removes it with a pair of dissecting forceps and scissors, a practice we conceive which would be "more honoured in the breach than in the observance." It certainly is not consonant with sound principles.

In severe cases of bruise attended by inflammation and swelling, in which the suppurative stage had not commenced, the nitrate of silver must be applied on the bruised, swelled, and inflamed parts, so as to induce an adherent eschar, which is to be exposed to dry. In those cases where a recent bruised wound is too considerable to heal by eschar, the nitrate of silver should first be applied on the surrounding skin for several inches, so as not to induce vesication, and over the wound which cannot be covered by the skin: the skin is then to be brought

as nearly into apposition as may be by means of common adhesive plaster, without any intervening dressing. The plaster will not irritate the skin or wound, for they are protected by the eschar. By this method the wound will frequently be healed by the first intention.

In the treatment of ordinary ulcers, Mr. H. does not recommend the mode of healing by eschar, the attention, discrimination, and experience required on the part of the surgeon, and the necessary care on that of the patient, rendering it rather difficult. Except, therefore, in small ulcers, where there is no inflammation, but little discharge, and the parts not exposed to much friction or motion, Mr. H. has abandoned the practice. In large ulcers, attended with inflammation, he has, however, adopted another plan, which he states to be far more successful, and to require very little attention on the part either of the surgeon or patient.

“If there be swelling or œdema, I direct the patient to take a dose of opening medicine, to apply a common poultice of bread and water over the ulcer, and to keep in bed for four and twenty hours. The inflamed parts must be washed with soap and water, and wiped dry. They are then to be moistened with water, and a long stick of the nitrate of silver must be passed all over the inflamed and ulcerated surfaces, twice, and rather more freely on the ulcer itself, and on the surrounding skin. Lint must then be put on the ulcer, and the whole of the inflamed and ulcerated parts must be covered with the neutral ointment,\* spread on linen; a compress of five or six folds of fine linen is then to be applied over the ulcer, and a common roller, not too tight, to keep on the whole. The leg is to be examined on the fourth day, when it will be found that the inflammation is nearly, if not entirely gone, and the ulcer is in a healing state. The nitrate of silver must then be applied on the whole of the ulcer, and once lightly over the skin immediately surrounding it, one or two inches in breadth; the lint and ointment are to be applied as before, and the bandage rather tighter. The case must be treated in this manner every third or fourth day, until the ulcer be healed. I would recommend wearing a calico roller for some time afterwards, till the leg has recovered its usual strength. The patient may walk about after the first or second application of the nitrate of silver.”

Mr. H. like most other surgeons, has experienced the difficulty of managing old ulcers of the legs, and found the insufficiency in most severe cases of even the much-approved plan of Mr. Baynton. Mr. H. was therefore led to try various modes of application of the nitrate of silver in these cases, and after many experiments he has finally adopted the following plan.

“The first thing I direct my patient to do in such a case, is to apply a common white bread and water poultice, to keep in bed for eighteen or twenty-four hours, to allow any swelling of the leg to subside, and to take a dose of opening medicine. The leg is after this to be washed well with soap and water, to free it from any oleaginous substance, or loose cuticle; it is then to be wiped dry with a towel, the inflamed part is to be moistened with pure water, and the nitrate of silver is to be passed twice over it, and a little beyond it on the healthy skin; and then, more freely, to every part of the ulcer, and particularly the edges and immediately surrounding skin; a piece of lint is to be put over

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\* The following is the formula for the ointment here alluded to by Mr. H.—  
 R. Emplastri plumbi, ℥iij. Olei olivæ, ℥ij.; Cretæ ppt. ʒiij.; Aceti distillati, ℥ij. The acetic acid and chalk must be well mixed in a mortar, and the lead-plaster and olive oil, previously slowly melted together, are to be added. The whole is then to be stirred together until cool.



the ulcers, and linen spread thick with the neutral ointment, over the whole inflamed and ulcerated parts; a compress of linen, and a common calico roller are to be applied in the last place, the latter not tight, but just so as to retain the dressings in their place. The patient is obliged to remain a few hours in bed, on account of the pain occasioned by the application of the nitrate of silver; but after this has once subsided, he enjoys more relief than from any former application, and sleeps soundly all night, for the first time perhaps for years. The dressings are to be taken off at the expiration of the fourth day, the inflammation is then found to have nearly subsided, and the ulcer is become more healthy in its appearance. If any of the plasters adhere, they may remain until the next time of dressing; the applications to the ulcer itself are readily removed, as there is usually a free discharge of lymph from its surface. This discharge is to be simply removed by a little linen or tow; the nitrate of silver is again to be applied all over the wound, on its edges, and the skin immediately surrounding it; and if any of the plaster be detached, and there be any inflamed part, slight sore, or excoriation, those parts are to be slightly touched with the nitrate of silver. About the expiration of three more days, the eschar is found to be detaching itself from the surface previously inflamed, and all the inflammation gone. The patient now makes no complaint, is free from pain, sleeps well every night, is able to follow his employment; there is generally a free serous discharge from the ulcer, free from fætor. The nitrate of silver is again to be applied over the whole surface of the sore, its edges, and the adjacent skin. This plan has the effect of preventing any inflammation of the surrounding skin, or irritation on the surface of the ulcer itself. It is to be repeated every third or fourth day, till the ulcer be healed. When the ulcer is near the ankle, deep, of long standing, and with hardened edges, and with enlargement of the vena saphæna, and swelling of the foot, I have added, to the mode of treatment just described, the treatment by strapping, recommended by Mr. Baynton, and recently improved by Mr. Scott.\* The latter gentleman recommends the emplastrum plumbi, which is not so apt to irritate the skin; but where the nitrate of silver is used, the common adhesive plaster may be used without inconvenience. If any excoriation did arise from any cause, a slight application of the nitrate of silver would induce a firm eschar, and prevent any ill effect. I prefer that the adhesive plaster should be spread upon dimity, which is stronger, and gives more support than the calico."

Mr. H.'s experience in the use of the nitrate of silver in burns and scalds has not been very extensive, yet as far as it has gone it appears satisfactory. He says that by slightly passing the nitrate of silver once over a burnt surface, the pain is increased for a short time, but then totally subsides, vesication appearing to be prevented; the black cuticle peels off in a few days, leaving the part well. In cases in which the cuticle has been removed, the nitrate of silver applied on the surface induces an adherent eschar, and prevents the consequent ulceration. In cases in which a slough covers the surface, Mr. H. removes it, a practice we have already reprobated, and then applies the nitrate of silver, with the effect of producing an adherent eschar and a cure. In one case, in which, after a burn, the part was healed over, and a considerable cicatrix formed resembling a fungus, and attended with severe pain, the nitrate of silver removed all inflammation and pain. In very extensive recent burns, Mr. H. has never had an opportunity of using the nitrate of silver; a case of extensive scald has however been recorded in a late number of the *Edinburgh Medical and Surgical Journal*, which seems to confirm the anticipations of the utility of the remedy entertained by Mr. H.; we shall therefore insert it in our *Periscope*.

In an appendix, Mr. H. introduces some cases of a desultory character which

\* This plan will be found described in our Second Volume, p. 407 — *Ed.*



he could not well embody in the work. They relate to the use of nitrate of silver as a blister, in gun-shot wounds, in neuralgia, contracted rectum, ulceration of the tongue, irritable ulceration of the eye, fungous ulcer of the navel in infants, and in the treatment of corns.

A letter from Mr. Webster of Dalworth, and another from Mr. Tobias Browne of Camberwell, in which the writers bear their testimony to having used the nitrate of silver with advantage in various cases, are also given in a second appendix.

Mr. Higginbottom has but seldom used the nitrate of silver as a blister, but in the cases in which he has employed it, he states the effects to have been very satisfactory. He is persuaded that it possesses a decided superiority over cantharides in many cases, causing less irritation, and being more prompt in its action and also as not inducing strangury. It induces a very copious discharge without heat or pain after the first few hours. The vesicated part heals about the fifth day without leaving the least ulceration.

Three cases of neuralgia are related in which the nitrate of silver was applied as in external inflammation, along the course of the pain, with marked relief.

XXII. *A Manual of Materia Medica and Pharmacy, comprising a Concise Description of the Articles used in Medicine; with Observations on the Proper Mode of Combining and Administering them: Also the Formula for the Official Preparations of the London, Edinburgh, Dublin, Parisian, American, and most of the Continental Pharmacopæias; together with a Table of the Principal Medicinal Plants.* From the French of H. M. EDWARDS, M. D. and P. VAYASSEUR, M. D. Corrected and Adapted to British Practice. By JOHN DAVIES, M. R. C. S. Surgeon of the Hert's Militia; late Editor of the London Medical and Surgical Journal, &c. pp. 490. 8vo. London, 1831.

We have heard of a book published in this country some years since, in which the publisher modestly inserted his own name in the title page for that of the author, thus reaping at the same time literary fame and pecuniary emolument; and we have actually in our possession a work translated from the French, with a few additions, in which the author is merely noticed in the preface, as having written a very imperfect book on the same subject, whilst the translator and compiler modestly figures on the title page as the author! These were, however, bungling and easily to be detected attempts at fraud, and are not to be compared to the judicious management exhibited by the editor of the manual, the title of which is at the head of this article. Indeed we do not recollect ever to have met with what appears to be a more ingenious artifice to secure to one's self the credit of other people's labour, without actually laying claim to it, than that displayed in the publication under consideration. We say *appears* to be, for it would be malicious in the extreme to suppose that the surgeon of the Hert's militia could have imbibed so little honour from his gallant associates as to desire to appropriate to himself merit which does not belong to him. We venture, however, to assert that ninety persons in a hundred who would read that work, would receive the impression that Mr. Davies was the translator, and if a suspicion of his not being so, did perchance flash across their minds, they

would, on comparing the translation with the original, and observing the numerous additions, regard him, at least as the author of the latter. And yet this would be entirely erroneous, nor has Mr. Davies any where claimed being either the translator or the author of *all* the additions.

Indeed were Dr. Togno and Mr. Durand to say to Mr. Davies, "Sir, you have taken our translation of Drs. Edwards and Vavasseur's *Materia Medica*, with our numerous additions, without any acknowledgment of your obligations to us—you have published them as being corrected and adapted to British practice by you, and in the preface state your having added some new matter;" he might reply, "Gentlemen, I have made no claims to being the translator, on the contrary, to remove any doubt as to my having taken advantage of your labours, and to enable you at once to prove it, I have carefully preserved in my edition even your typographical errors;—as to correcting and adapting it to British practice, I have mystified your observations on the wax-myrtle so as to render them perfectly unintelligible;—and of new matter I have inserted three paragraphs of nearly four and a quarter lines each, relating to well-known English mineral waters; I have introduced into the list of wines two, (raisin and currant,) and I have also added five notes, making in all thirty-two lines." To all this what rejoinder can Dr. Togno and Mr. Durand make? We hope they will not be so ill-natured as to say that Mr. Davies has exhibited more talents for another profession than for his own, or take advantage of his not having made any positive claim to candour, to deny him the possession of that virtue.

So far, however, as we are concerned as reviewers, it is only necessary for us to state, that Mr. Davies has republished Dr. Togno and Mr. Durand's translation of the valuable *Manual of Materia Medica* of Drs. Edwards and Vavasseur, with a few additions and alterations, the most striking of the latter being the confounding of the additions made by the translators, and even his own three little sentences with the original, so that it is impossible to distinguish what belongs to the authors of the original work, what to the American translators, and what to the English editor, without a careful comparison of the three works; and thus by modestly omitting any distinguishing mark to his own three sentences, Mr. D. actually incurs the risk of having all the additions assigned to himself.

In showing his willingness to father the labours of Dr. Togno and Mr. Durand, he has paid them the highest compliment in his power, and one of which those gentlemen will no doubt be duly sensible.

## QUARTERLY PERISCOPE.

### FOREIGN INTELLIGENCE.

#### ANATOMY.

1. *Anomalies in the Arterial System and in the Ganglionic Nervous System.*—**M. JONIS**, *interne de l'hospice des Enfants-trouvés*, describes in the *Journ. Universel et Hebdom.* for June last a very interesting instance of anomalous arrangement of the arterial system and ganglionic nervous system, occurring in a child who died in consequence of imperforate anus, the rectum terminating in a cul-de-sac an inch above the os coccyx. The aorta communicated freely with the pulmonary artery through the ductus arteriosus. It gave origin, before its curvature, to a trunk common to both carotids, which proceeded perpendicularly upwards; at its curvature it gave origin to the left subclavian, and finally to the right subclavian, which arising from the termination of the arch, passed transversely behind the œsophagus in front of the vertebral column, then entered between the scapuli. At the second lumbar vertebra the aorta gave off the celiac trunk, the superior mesenteric, the right renal, (there was no left,) the spermatics, and divided into two branches; the first continuing in the direction of the aorta, and of almost equal size, gave off the inferior mesenteric, ran to the posterior parietes of the bladder in the median line, passed to its summit, and from thence to the umbilicus, where it divided into two branches. It could be injected in this course to within half an inch of the umbilicus. The second branch arising at the posterior part of the aorta, at an acute angle with the preceding, of half the diameter, passed a little to the left in front of the spine, as far as the sacro-vertebral angle. There it dipt into the pelvis, passed between the sacrum and rectum, forming a curve from the left to the right with the convexity downwards, and running upwards again in front of the right sacro-iliac symphysis, to terminate under the crural arch of the same side. In this course it furnished all the branches for the nourishment of the inferior part of the trunk and the lower extremities: 1st, at the sacro-vertebral angle, the right and left lumbar arteries. 2d. An artery distributed to the left lower limb, which corresponded tolerably well to the external iliac artery, taking nearly the same direction, furnishing the same branches, but in addition supplying the iliac muscle with branches, which in the normal arrangement, come from the hypogastric. 3d. Finally, from the convexity of the pelvic curve, successively arose, from the left to the right, most of the branches which are commonly given off by the two hypogastries. The branches which exist are very small and imperfectly developed; the middle sacral artery was entirely wanting.

The great sympathetic accompanied the arterial system in its irregularity—suitably developed at its superior part, it is but slightly so at its inferior, where a sacral ganglion only is found, not the coccygian one.

The cerebro-spinal nervous system did not participate in these anomalies. It was regular and fully developed.

The relator of the case is of opinion that this simultaneous cessation in the



development of the intestine, the bone, the nervous and vascular system occurs more frequently than has been supposed.

The anomaly presented by the superior portion of the vascular system have been several times previously observed, and are delineated in the great work of Tiedemann. The singular disposition of the inferior portion, however, of this system, M. Jodin cannot find described in any of the works on anatomy.

2. *On the Perspiratory Vessels of the Skin.*—Dr. HAKE has published in the *London Medical and Physical Journal*, for July last, some curious researches on the perspiratory vessels of the skin. It is well understood that the exterior surface of the skin is perpetually moistened by the transpiration of a saline fluid: during the spring of 1830, Dr. H. first observed the perspiration on the points of the fingers, “to follow a determinate arrangement, of which the investigation led to the conclusions which follow: at some of them, however, the French anatomist, Beclard, had previously arrived. ‘The surface of the skin,’ says Beclard, ‘presents small wrinkles peculiar to the epidermis in the palms and soles: these are prominent lines, separated by other depressed lines, running in various and winding directions, and which are formed by rows of papillæ.’ “In my notes I have preserved an account which to the above is dissimilar, but in language, the facts being the same; but there are some minute points which Beclard probably saw, without copying down: they are as follows.

“1. On submitting the base of the ridge, or prominent line, to the micrometer, its width was found to occupy one-fiftieth of an inch of space, whilst that of the groove, or depressed line, occupied only one three-hundredth part of an inch.

“2. The furrows are concave from side to side, and from their edges, which are distinct, arise the sides of the ridges which meet above at an angle, and thus, with their attached base, produce the form of a prism. The width of either side is about one ninety-sixth part of an inch, but the sides themselves are differently occupied: the one being covered by papillæ which are about one fiftieth of an inch remote from each other, and arranged in a regular series; the other side being occupied by superficial grooves, each of which passes from the porous aperture of a papilla, and descends into the groove: by the latter arrangement, the globule of perspiration which arises through the pore of the papilla, passes also into the groove, and thus is equally diffused over the surface.

“3. By dissecting away the ridge, layer by layer, to the level of the furrow, each new surface presents an opening, which is perpendicular to the spot formerly occupied by the mouth above.

“On first observing these phenomena, there are three circumstances apt to cause deception: 1. Owing to the inclination of the sides of the ridges, the papillæ may appear to be in the furrow. 2. The papillæ, if viewed from the sides which they occupy, seem to be on the summits of, or rather to constitute, the ridges. 3. If the ridges be viewed from the side on which the grooves are, the whole cuticular surface, owing to the meeting of grooves and furrows, looks reticulated.

“The cutaneous surface is, on the back of the fingers, traversed by grooves of many sizes, which frequently, and in all directions, cross each other, so as ultimately to leave only so many spots of uninterrupted surface. When, in order to find out the ultimate design of all this, a powerful lens is preferred, it is soon discovered that the former structure is so deformed as to yield no information; in fact, it will not bear the action of a high magnifier; but a moderate lens, will without any distortion, sufficiently enlarge the field of nature. If a mild perspiration be present, glistening particles of fluid are here and there observed, generally at equal distances from each other; and thus they follow the courses of the grooves, not occupying their cavities, but the summits of their sides; this is the more remarkable on the dorsum of the second phalanx of the fingers, but consequent on the frequency of the decussation of grooves, even there is

often confused. A superficial furrow may be occasionally traced, extending from a pore to a groove, but such is only to be regularly seen on the palms. The pores vary in size; those of the palmar surfaces being larger than on the backs of the fingers, and the latter than elsewhere; were I asked the reason of this variation, my experience would lead me to say, that it was instituted to give passage to a fluid more or less impregnated with saline matter.

"On the back of the first phalanx, the texture of the cuticle is fine and translucent; observing which, I deemed it probable that a microscopic examination might be attended with an useful result: by dint of care and labour, I was delighted with the sight of a few small and exquisitely attenuated vessels, of a red colour; they were directly under the cuticle, to all appearance, and, having emerged, they seemed to creep a little way, then open with red mouths, and become continuous with the epidermis. As far as could be distinguished, each vessel became first visible at a little distance from one pore, and, after a short course, opened to form the next.

"After having soaked the hand in very hot water, and again dried it, I examined the dorsal surface with the weakest power of the simple microscope, and found it regularly studded with aqueous globules, which, while the parts remained swoln, were no sooner removed than replaced. By a sudden and undesigned movement of the lens, a reticular work became visible, which seemed to be of vessels: although this appearance was as evident as if of far greater size, I doubted its reality, lest it should consist of so many grooves, which, in a peculiar light, might have the aspect of elevation; but, on a comparison with such as I knew to be only grooves, the distinction was marked. I have mentioned that there are left between the grooves only so many spots of uninterrupted surface, on these it is that the net-work above-mentioned exists: it is so distinct on the joints as to become visible, by practice, to the naked eye. On these perspiratory vessels I observed numerous projecting points, resembling truncated ramuscles of the prime branch. Under the light requisite to produce these phenomena to vision, the net-work has a beautiful blue colour. At the summits of the sides of grooves, (which on some joints sub-divide in the form of vessels,) it is that the vascular elevation is most conspicuous: one vessel I saw running down the side of a groove. The anastomoses of these vessels seem very frequent, and at different angles, especially at ninety, sixty, and one hundred and twenty degrees. At the apex of each papilla which is given off, the pore was visible if not occupied by sweat, and not of a red colour, like that discovered near the roots of the nails."

"Every one knows that the epidermis at the sides of the nails is much thicker than elsewhere. It was with a view to ascertain whether, and how, the pores are continued downwards, that I removed with scissors many layers of cuticle from those parts, and was astonished to see how well, not only the pores, but the ridges and grooves, maintained their characteristics: however, when the epidermis, instead of being cut, is peeled off the palms, the layer which becomes exposed is precisely similar to that which is removed. But a fact, which I at that time observed, has since often attracted my attention, for I conceive it to be important, although simple: however dry the skin may be externally, as soon as a layer is removed, the pores of the new surface are occupied by sweat. To account for the occasional aridity of the skin, hypothesis has almost, of necessity, urged a spasm of the pores, and sudorifics have been said to have the property of relaxing the contraction. The above experiment demonstrates the point in which the spasm resides.

"Much has been said concerning insensible perspiration. It is true that if the hand be presented to a mirror, its polished surface becomes tarnished: but this is owing to spontaneous evaporation from the excreted fluid. I have watched the progress of perspiration often, and always seen it to arise in a liquid state: nor is there sufficient reason to suppose an additional set of pores for an insensible exhalation.

"The appearance which I have described as resembling a net-work of ves-

sels, I believe to be an elevation of cuticle corresponding to the shape of the vessels beneath, which open at its surface. The thickness of the epidermis on the palms and soles, precludes the possibility of discovering the arrangement of the vessels which lead to that membrane, but we may infer a regular and fixed distribution, from the harmonious order of the pores themselves.

"Whether or not the perspiratory vessels were seen by Kaau and by Dr. Hunter, it must be certain that they proceed from the dermis to the epidermis: from the researches of Malpighi and his successors, it can be no less certain that these are dermoid vessels which open to supply the fluid of, if not to form, the rete mucosum. These facts, had they been considered, might have served in explanation of the question, why the fluid effused beneath the cuticle from blistering does not escape through the pores, although Bichat, as well as Meckel and others, have used hypothesis for its solution. The cantharides, when applied to the skin, acts on the secreting vessels of the dermis, which pour out, in reply to their proper stimulus, a greater quantity of fluid on the cellular tissue which invests its exterior surface, under the denomination of rete mucosum. How then can this fluid enter the porous vessels, which are continued from the dermis, and open only on the surface of the cuticle?"

"With regard to the mode of proceeding, it should be remarked that it is not through a strong, but rather through a weak light, that the objects on the skin are to be seen; that an egregious error is committed by those who use powerful magnifiers; and that those are not less mistaken who have searched for pores on the detached portions of the skin, instead of examining living parts during the performance of their functions."

3. *Malformation of the Uterus*.—M. VIDAL describes a curious instance of this. The uterus was elongated, cylindrical, and had but a single fallopian tube, and a single ovary. No trace of the other fallopian tube or ovary, could be discovered on the most careful inspection. The left kidney was situated in the pelvis.—*Bulletin de la Soc. Anat. Par M. Bérard, Jr. Secy.—Rev. Méd. June, 1831.*

4. *Anomalous arrangement of the Aorta*.—M. CHEVREUILIER exhibited, not long since, to the Anatomical Society of Paris, a case in which the arch of the aorta passed behind the trachea and œsophagus, immediately in front of the spinal column. Four arteries arose from its convexity; nearest to the right side, the right primitive carotid, next the left primitive carotid, next the left subclavian; and nearest to the left side, the right subclavian. This last passed to the right side in front of the trachea and œsophagus.

M. BERARD, Jr. at the same time, exhibited another anomalous arrangement of these parts. The arch of the aorta, in its natural position, gave origin to the four arteries first noticed, and in the same order, but the right subclavian passed to the right side between the vertebral column and the trachea and œsophagus.—*Ibid.*

5. *Anomaly in the Pneumogastric Nerves*.—M. BIGEAUD, professor of anatomy at Modena, has communicated to the Anatomical Society of Paris, the dissection of a woman, in whom both pneumogastric nerves, presented in their whole course, a series of ganglions, some as large, others smaller, than the intervertebral ganglions of the spinal nerves, which they also resembled in structure. The great sympathetic on the left side was atrophied, and on this side the ganglions of the pneumogastric were both larger and more numerous. This woman during life exhibited nothing remarkable, except that she had a most voracious appetite.—*Rev. Médicale, June, 1831.*



PHYSIOLOGY.

6. *Mechanism of the Human Voice during Singing.*—M. Bennati some time since communicated to the Royal Academy of Sciences of Paris, a memoir on this subject. The following report of Baron Cuvier exhibits an excellent analysis of this interesting paper.

The intention of the memoir is to make known the part performed by the velum palati, or rather the strait of the throat formed by the velum palati, its arches, and the base of the tongue. We are aware that of the physiologists who have studied the organ of the voice, some have compared it to a stringed instrument, others to a reed instrument. M. Savart has compared it more happily to a kind of bird-call, and has established that the two ligaments of the glottis, and the ventriculi which separate them, take an essential part in the primitive formation of the voice. He has shown, at the same time, that the nature of the walls of the mouth, its internal configuration, and the more or less of tension of the parts which form it, concur in modifying the primitive sound, and can more especially lower it by means which do not consist in the greater or less elevation and depression of the larynx, taken in its totality. M. Savart has not, however, paid attention to the special use of each of these parts, neither has he attended to that of the velum palati. In general, little attention has been paid to this second strait; through which the air which produces the voice, is obliged to pass. Fabricius, of Aquapendente, had, nevertheless, remarked its importance, after having shown that the voice is formed at the larynx, after having made known the relations of elevation and depression of the larynx, and, in consequence, the variations in length of the buccal cavity. This illustrious anatomist also described the variations in width that the same organ undergoes in passing from grave to sharp sounds. Ferriën, long after, appears to have attended to the same considerations, and to have gone further than Fabricius: for, in terminating his memoir on the voice, he says, that the chordæ vocales are not the organs of every kind of voice; that a certain guttural intonation, and a false treble of the same nature, are produced by a new organ, the existence of which he has declared, and which he proposes to make known in a new memoir. The promised memoir never appeared, and thus we know not of what organ he intended speaking; Haller has supposed it to be the velum palati, but, however, he has not said in what manner this organ concurred in forming the voice.

In a thesis sustained at Tübingen, in 1781, M. Hellway stated, that in the false treble, the uvula contracted, whilst it did not change its shape in the ordinary tone. This is, we believe, all that has been said hitherto of the part the velum palati plays in the production of the voice, before the appearance of this memoir. M. Bennati, who joins to the skill of the physician great exercise in the art of singing, and who has one of the finest voices we know of, has paid particular attention to these motions. he has ascertained that the tongue itself, in elevating and depressing itself, or in forming itself into a hollow, exercises a powerful influence on the modulations, and that, in order that the larynx may give any tone, it is necessary that the os hyoides be firmly fixed in a determined position. He has, besides, recognised that the notes improperly called *de la tête*, and false treble, are formed almost exclusively by the labour and the strongest contraction of the superior part of the vocal canal. He names them, in consequence, *super laryngeal*, and calls their union *the second register*, to distinguish them from the notes said to come from *the chest*, and which he had rather call *laryngeal*, and their *ensemble*, the *first register*. He does not mean to say, by that, that the larynx does not aid in forming the one, nor the throat the other; but he wishes merely to show the more essential part that the throat takes in forming those of the *second register*. In regard to the *third register*, of which some works on singing speak, he regards it as imaginary, and owing simply to the vibration, more or less powerful, of the last notes

of the first, and of the first notes of the second. Those singers whose voices are composed of *two registers*, have need of more art to manage the transition from one register to the other, so as to unite them in the ear, and are more easily fatigued than others.

7. *On the Connexion between the Maternal Vessels and Cord.* By S. C. HOLLAND, M. D.—The following experiments were performed in order to ascertain, if possible, the nature of the union existing between the maternal vessels and the cord. Some physiologists are said to have succeeded in passing injections from one to the other, proving, as they imagine, a direct connexion; but so many probable sources of error have been pointed out in their experiments, that the conclusions drawn from them are little to be depended upon. At one time substances have been injected which emit a strong odour; at another, such as do not combine with the blood, as oil. Mercury, and the ordinary coloured injections have occasionally been used. There are great objections to the employment of all substances, except the two latter, and these are not altogether unexceptionable. When camphor is conveyed from the maternal vessels to the placenta, it is quickly absorbed and carried with the blood into the cord or fetus. We have no means of ascertaining the time necessary for its absorption. This will depend on circumstances with which we are imperfectly acquainted. "When a quantity of camphor," observes Majendie, "is injected into the veins of a dog, the blood soon takes a strong odour of camphor. After having made this injection into a bitch with pups, I extracted a fetus from the uterus; at the end of three or four minutes its blood had no odour of camphor; only a second fetus, extracted after a quarter of an hour, had a strong odour of camphor. It was the same with the other fetuses."\*

On account of the rapid absorption of substances which are sometimes injected, we are scarcely entitled to conclude, from their presence in the fetus, that a direct connexion exists between the vessels of the uterus and the cord. The employment of mercury or the ordinary coloured injection, is not entirely free from fallacy. If the connexion between the maternal vessels and the cord is *indirect*, or in other words, if the blood which is poured into the placenta from the uterus, is absorbed by the minute ramifications of the umbilical vein, in place of circulating in a continuous current to the fetus, it is nevertheless obvious that those vessels which absorb, have open mouths in the direction of the uterus, whence the injection is transmitted, and, consequently, may, immediately after death, or whenever the vessels are similarly circumstanced, allow the propelled fluid to enter them. Beclard succeeded in injecting the uterus from the vessels of the cord in a woman who died during gestation. Experiments of the same kind have been repeatedly made by other physiologists, on the lower animals, but not with the same results. If, indeed, we grant that the experiment has been successful, in one or two instances, the positive evidence which can be produced is so equivocal in its nature, that it is wholly insufficient, in the face of numberless experiments of a contrary bearing, to establish a *direct* connexion. The arterial blood in the general circulatory system terminates in veins, and, if we consider the nature of those vessels of which the cord is formed, and the manner in which the blood circulates in them, we shall observe the same fact. The arterial blood which flows into the placenta from the uterus, is conveyed by the umbilical vein into the fetus, and the venous blood which is poured into the placenta by the umbilical arteries, is carried into the system of the mother by the veins of the uterus.

*Experiment I.*—A rabbit, about the end of gestation, was killed by prussic acid. A quarter of an hour after death, the tube of the mercurial injecting apparatus was *fixed* to the inferior portion of the aorta, immediately before its bifurcation into the iliac arteries. In a few minutes a great number of small vessels on the external surface of the uterus, were observed beautifully inject-

\* Trans. by Dr. Milligan p. 508.

ed. The process was carried on for about three-quarters of an hour, at which time it was necessary to discontinue it, in consequence of several vessels being ruptured. On opening the uterus, the maternal portion of four placentæ were found considerably injected, as well as a few vessels on the fetal portion of two of them. No mercury whatever had passed into the vessels of the cord.

*Experiment II.*—The object of this experiment was to ascertain, whether it were possible to inject the whole of the placenta and the vessels of the cord, with a very finely coloured composition injected from the inferior part of the aorta. A bitch, apparently within a few hours of pupping, was killed by prussic acid, and the experiment was immediately commenced. The results of the experiment were not examined till the following day. All the placentæ were most distinctly and beautifully injected. The vessels of the cord had received no part of the injection. Injected vessels were readily traced from the uterus into the placenta. The best mode of showing this, is to tear, under the water, the placenta gradually from the uterus. The results of this experiment were observed by my friends Drs. Knight and Favell, and Messrs. William Jackson, James Ray, and Samuel Gregory, surgeons.

*Experiment III.*—A cat, near the end of gestation, was killed by the prussic acid, and left undisturbed for about two hours, it was then immersed for an hour and a half in warm water, after which a very fine injection was transmitted through the inferior portion of the aorta. Two days afterwards, one of the arteries going from the kitten to the placenta, was injected with mercury. On examining the placenta, the fetal portion was found to have received a considerable quantity of the coloured injection. The whole of the fetal surface presented a multitude of small vessels of an arborescent appearance. The vessels of the cord were in a natural state. The vessels of the fetal portion were fully injected with mercury. No connexion, however, could be traced between the two different kinds of injected vessels.

Many experiments were performed on each of the fœtuses, to ascertain the nature of the connexion between the uterus and the cord, which are not related, because the results were precisely the same as those which are given.

In the first experiment there is nothing particularly worthy of observation, except the injected vessels on the fetal portion of the placenta. In the second experiment, the coloured injection had succeeded remarkably well. The vessels of the cord were, however, not in the least injected. The results of the third experiment are extremely interesting. In appearance, the whole of each placenta was fully injected, nevertheless, a great number of vessels on the fetal portion became very soon visible, on the employment of the mercurial injection, showing that the coloured fluid had penetrated only one set of vessels.—

*Physiology of the Fœtus, Liver, and Spleen.*

8. *Case of complete absence of the Cerebellum, together with the Posterior Peduncles, and protuberances of the Cerebrum, in a young girl who died in her eleventh year.*—Communicated by M. COMARTEK, resident in the hospital of St. Anthony, (Service de M. Kapeler.)—Alexandrine Labrosse was born at Versailles, in May, 1820. Her father possessed a strong and robust constitution, but her mother was weak and unhealthy, and moreover, accustomed to excesses of every description. This child was very feeble when born, but well formed—she continued extremely delicate and puny, and grew but slowly. She had not cut her first teeth at two years of age, and it was only after she had reached her third year, that she began to lisp a few words. M. Miquel, to whom I am indebted for these particulars, saw her for the first time in 1827, when he was informed by her father that she was five years old before she could stand alone. He was astonished at her small size, and remarked particularly the great feebleness of the extremities. This symptom, joined to the want of intelligence in the child, and the impossibility of her articulating a word clearly, had induced M. Miquel to suspect some injury in the brain. He was several times called upon to prescribe for gastro-



intestinal irritations, although these presented no remarkable peculiarities. The last time he saw her, which was after her ninth year, he found the pupils extremely dilated, from which he was led to suspect the presence of worms in the intestinal canal. He was about to direct anthelmintics, when the nurse informed him that the little patient kept her hands constantly applied over the genital parts.

On the 12th of January, 1830, she was admitted into the Hospital des Orphelins, as a forsaken child. Her certificate of admission represented her as paralysed in the abdominal extremities, speaking with difficulty, and that her disease was owing to a fright experienced by her nurse.

In the letter addressed to the superintendant, requesting her admission, M. Miquel observes, "this little girl, although nine and a half years old, in consequence of the poor nourishment and little care she had received, is scarcely as large as a child of six years: this cause has arrested the development of both her physical and moral faculties."

At the time of her entrance into the Orphelins, she was feeble, cachectic, and possessed of very little intelligence. Apparently indifferent to every thing surrounding her, she nevertheless manifested friendship and gratitude for those who rendered her any attentions. When spoken to, she replied with difficulty and hesitation. Her limbs though extremely feeble, yet allowed her to walk, but she often fell down. She possessed the use of all her senses, eat moderately, and all the functions of nutrition were well performed.

In the month of January, 1831, when seen by M. Combette, her condition was as follows: Her features indicated a deteriorated constitution, and possessed an air of stupidity. She lay constantly upon her back, with her head inclined to the left side, and she could scarcely move her limbs; which, however, exhibited no diminution of sensibility. She had the free use of her hands. Her condition always manifested depression and dullness, and she seemed alike indifferent to both pleasure and pain. When questioned, she replied simply *yes* or *no*, always however, correctly.

For a long time she had been subject to glandular engorgements about the neck, and especially near the parotids, and for a fortnight had a carbuncle of no great size or violence, situated on the right buttock. On the three outermost toes on the same side, there existed an ulceration accompanied by a livid redness, from which there was a very abundant discharge of extremely fetid pus.

Towards the middle of February, along with her other infirmities, Alexandrine Labrosse had stomatitis, (as had many other children in the hospital,) complicated with symptoms of enteritis. After this she grew daily more and more feeble, exhausted by an incessant diarrhoea.

She died on the 25th of March, 1831. Since her death, I have been positively informed, that she was addicted to the habit of masturbation. The sisters have also assured me, that she was subject to epileptic convulsions, and that a few moments before death, she had experienced a violent general convulsion.

*Autopsy* thirty hours after death.

*External Habit.*—Body lank and emaciated. Skin discoloured. Large slough over the sacrum. A small livid wound on the right buttock, occasioned by the incisions I had made. The three diseased toes had a blackish and gangrenous appearance. Scrofulous engorgements upon the neck.

*Head.*—Under the integuments of the cranium near the parietal protuberance of the right side, an ecchymosis existed about the size of a dollar. The cranium was rather thicker than usual. The meninges of the brain appeared healthy. The cerebrum appeared in a natural condition, except that it seemed to me comparatively very large. Dissected subsequently by M. Magendie, a small sanguineous effusion was found in the left posterior lobe, which did not appear to have existed long, and which was not more than two or three lines in diameter. The covering of the cerebellum being divided, the medulla oblongata cut at the occipital foramen, and the encephalic mass raised and inverted—the following appearances were observed:

A large quantity of serum was discharged, filling the occipital fossæ. In

place of the cerebellum, I found a gelatinous membrane of a semicircular form, attached to the medulla oblongata by two membranous and gelatinous peduncles. The one of these on the right side had been torn. Near these peduncles I found two small white isolated masses about the size of a pea. On one of these was found one of the branches of the fourth pair of nerves. The tuberculi quadrigemini were entire. On the posterior and inferior side there was the appearance of an erosion, in the midst of which the orifice of the canal of Sylvius appeared. It extended a little upon the medulla oblongata, making a slight alteration in the restiform, and in the olivary bodies. The fourth ventricle did not exist. There was no trace of a pons varolii, but without any appearance of want of substance. The anterior pyramidalia terminated in a fork by the cerebral peduncles.

Of the cerebral nerves, I could only find the origin of the first, second, third and fourth pair, which appeared in a healthy state, except the latter, which was, as I have said, detached with the small white mass, of which I have spoken. Not having raised the brain myself, it was impossible for me to find the origin of the other pairs. They all however, existed, and could be easily perceived through the openings of the dura mater. They have, moreover, been subsequently dissected by M. Magendie, and exhibited no peculiarity.

The cerebral substance was of the ordinary consistence, but the medulla oblongata appeared a little softened, especially about the erosion I have described, where there existed a kind of maceration. The occipital hollows were regularly formed, but appeared to me rather smaller than natural. The vertebral arteries existed. I cannot say how these were distributed, because they did not at first fix my attention.

*Spine.*—A considerable quantity of serum ran from the spinal canal. The spinal marrow offered nothing remarkable.

*Chest.*—Both lobes of the lungs crepitated, but their whole surface was covered with miliary tubercles, which were also found in the parenchyma. The cavity of each pleura contained two or three ounces of serosity. The pericardium and heart offered nothing in particular.

*Abdomen.*—The intestinal circunvolutions were of a deep red colour. The mucous membrane of the stomach exhibited a number of red dots on a slate coloured ground, and near the anterior part and great arch, there were five or six brown patches. In the middle of each of these, a small ulceration with elevated and perpendicular borders appeared. This membrane was otherwise of its ordinary consistence and thickness.

The mucous coat of the duodenum presented no ulceration. It was slightly red, and its follicles prominent. After this, throughout the whole tract of the small intestine, it was of a livid red colour, presenting numerous ulcerations, especially about the ileo-cæcal valve. The large intestines presented nothing in particular.

The mesenteric ganglions were larger than ordinary. The liver was of an extraordinary size, and of a pale colour.

*The Organs of Generation.*—The finger could readily be introduced into the vagina. The hymen did not exist. The labia were of a lively red colour, and bore the appearance of having been frequently irritated. The ovaries and uterus existed, but they appeared smaller than usual with girls of the same age.

The kidneys, spleen, &c. were in a natural state.

*Conclusions.*—This singular case is calculated to excite the particular attention of physicians of the physiological school, and presents no less interest for pathologists. I regret exceedingly, my inability to say any thing relative to the moral condition of this child previous to its entrance into the hospital, and am still in the expectation of receiving further information. Should any particulars be offered, I shall immediately communicate them.—*Bull. de la Soc. Anat.—Rev. Médicale, April, 1831.*

3. *Extraordinary Case of Discharge of Oil from the Bowels, and Sugar from the Urinary Passages.*—A curious instance of this was related by Dr. ELLIOTSON



in a late clinical lecture. It occurred in a man who, for three years, has discharged oil in large quantities from his intestines. The man is also labouring under diabetes, discharging sugar from the urethra, while from his rectum he daily pours forth an abundance of oil. The case must be very interesting to chemists, on account of such a double manufacture going on. Four of the first chemists in England have had specimens, which they have examined, and they found the discharge to be genuine oil. After a motion it flows from him liquid, and then it concretes. It swims in yellow flakes over the contents of the vessel, of the colour of unblanched bees' wax. A case of this kind is mentioned by Mr. Howship in one of his works; he says the lady took a pint of oil, and it immediately stopped the manufacture. I gave this man six ounces of sweet oil, said Dr. E. "not knowing what to do with the case, and trusting to the one recorded by Mr. Howship. He took three ounces, and was sick, he then took the other three, and they stayed down; and he has made very little oil since. He has phthisis into the bargain, so that he is producing three foreign substances—oil, sugar, and pus. Of course he must die. He has been inhaling chlorine with very great advantage: it has diminished the expectoration, and also the cough exceedingly, so that he has hardly any thing to complain of. He is sinking under the disease of his lungs, kidney, and intestines, but he will hardly allow that he now suffers at all. I may mention that I tried iodine for his phthisis, but it distressed him very much even in the most minute quantity; the chlorine, however, he bears perfectly well."—*London Medical Gazette*, June, 1831.

10. *Influence of the Genital Organs on the Cerebellum.*—Baron LARREY, in his *Clinique Chirurgicale*, states, that "The genital organs seem to have a marked influence upon the cerebellum, for when they are removed by disease, or any other means, the occipital region of the cranium and cerebellum gradually experiences such a sensible reduction, that the occipital bumps, which had been more or less protuberant before, disappear, and the whole occipital region of the head is diminished in proportion. We have verified this change of dimension in a great number of soldiers, who had been operated upon for sarcocele, and when one testicle only was removed there was only a reduction of that portion of the cerebellum and occipital bump, which belongs to the same side, with the extirpated testicle."

A soldier, who had been wounded in the occipital region by a splinter of wood, was attacked with all the symptoms of inflamed cerebellum, and, in despite of every thing which was done, they were only dissipated by the appearance of an abscess in the nape, which opened spontaneously. In about three months after the accident he rejoined his regiment, and many years elapsed before he again came under Larrey's notice. He was then so extremely altered in appearance, that the author mistook him for a young conscript, who had been exhausted by some asthenic disease. He was 32 years of age, of middle size, but thin and pale, his eyes were depressed, his lips blanched, his hair, more especially that which covered his occiput, was thin and bristled, and a feeling of pain and coldness was always experienced in the back part of his head. He was beardless, his voice was feminine, and as some of the assistants were not without suspicion of his sex, a more minute examination was considered necessary.

"To our great surprise, (says Larrey,) we found his genital organs reduced to the size of those of an infant some months old. His penis was not more than five or six lines long, and two or three lines thick, it never exhibited any degree of erection, and his testicles were so wasted as scarcely to equal in size a small bean."

A Swiss soldier of the guards, named Granfort, fifty years of age, was received into hospital for an erysipelatous affection of the left side of the face, attended with habitual pain and weight of head, deafness of the left ear, and a great difficulty of speech. The pulse was febrile, and the strength was much



reduced. These symptoms were occasioned by a fall, which this man had sustained a few days before the appearance of the erysipelas. Emollients were externally applied; diluents and anodynes were internally administered. After some days fluctuation was felt, and a deep incision discovered a large abscess in the neighbourhood of the left mastoid process, which was denuded and carious in one point, where a communication had been formed between the internal ear, which was the seat of the abscess, and the external surface upon which it pointed. Five or six weeks afterwards the walls of this abscess were clean and began to heal; still, however, pains in the occiput, a sense of weight in the head, and considerable difficulty in keeping the head from falling towards the affected side, were complained of. He seldom spoke, and when he did he articulated badly. The integuments covering the occiput were very sensible, the arm and hand of the left side were threatened with palsy, but his mind was completely undisturbed. After two months convalescence this soldier fell into a state of lethargy, and died twenty-four hours afterwards. On inspection the dura mater appeared of a deep brown, the arachnoid was opaque and in some parts of a dull white, these membranes and the cerebral mass were filled with turgid blood-vessels, the consistence of the brain was firmer than natural, the lateral ventricles contained some colourless fluid, three spoonfuls of pus were found in the cerebellum, the right lobe was diminished, and the medullary substance forming the arbor vitæ was dense and of a gray colour. The purulent matter was effused underneath the pons varolii and into the lambdoidal fossa, where the carious opening lay which communicated with the internal ear, and around which the membranes had contracted adhesions. "The scrotum and penis were so reduced from their primitive volume, that one might consider them as being in the second stage of atrophy."

"John Baptist Dandé, aged 26, of a scrofulous habit, who had been formerly under treatment for diseased spine, was attacked with pains in the left testicle, which swelled, and obliged him to apply for relief. It was at first regarded as a consequence of suppressed gonorrhœa, although the soldier denied that he ever had any syphilitic symptoms, and he was treated in accordance with this view. The tumefaction of the testicle increased however, and extirpation of this organ was at length determined on. After two months the cure was supposed to be complete, and Dandé rejoined his regiment; but in about six months afterwards the other testicle became attacked with symptoms of a similar character to those which had been experienced formerly, and every effort to resolve the swelling and to save the organ being made in vain, the appearance of symptomatic fever and other malignant tokens of inveterate disease suggested the necessity of a second operation. No disagreeable symptoms followed—

"But, one remarkable thing is, that the nape now appears sensibly depressed, that the occipital bump, corresponding with the testicle first amputated, is much smaller than the right. The body is likewise emaciated, the beard and mustaches are nearly fallen off, and, in fine, it is obvious that the total loss of the genital organs has had a very marked effect upon the cerebellum, since the occipital region offers a profound and abnormal depression—the consequence of atrophy, which also affected all the bones of the skull, the skin covering the face, and the beard."—*Medico-Chirurgical Review*, July, 1831.

11. *Atrophy of one-half of the Encephalon*.—In our seventh volume, p. 224, we noticed an instance of this reported to the Anatomical Society of Paris, by M. HENRY; we learn from the *Rev. Médicale* for June, 1831, that an entirely similar case has been since communicated to the same Society, by M. Bell.

12. *Function of the Optic and Olfactory Nerves*.—M. VIDAL has communicated to the Anatomical Society of Paris, a case of fungous tumour of the dura mater at the base of the cranium. The optic and olfactory nerves were compressed and destroyed by the tumour, whilst the fifth pair remained perfectly unaffected.

Vision and the sense of smell were destroyed. This fact confirms certain experiments of M. Majendie, from which it results that if the trifacial nerve is necessary to vision, at least it cannot be considered as the exclusive organ of this function. It also tends to prove, in opposition to the opinion of the celebrated physiologist just alluded to, that the olfactory nerve enjoys the same prerogatives as the optic, in relation to the sense to which it transmits impressions. — *Compte rendu des travaux de la Soc. Anat. — Rev. Méd. June, 1831.*

13. *Extra-Uterine Fœtation.*—Professor CHAUSSIER is of opinion that the development of the uterus, and the secretion of the membrana decidua are phenomena inseparable from extra-uterine pregnancy. Various observations have shown that this opinion is too exclusive, and the point may be now considered as settled, M. Gaussail having recently met with the uterus in its ordinary condition in a female gone her full term, with an extra-uterine fœtus. — *Ibid.*

14. *Pulsation in the whole Vascular System.*—Dr. DAVID RADDAH of Glasgow, has communicated to the editor of the *London Medical Gazette*, the case of a man affected with paralysis of the right side, in whom the following very interesting peculiarities of vascular action presented themselves.

"1st. The whole venous system of vessels was observed to pulsate. On looking attentively at any of the superficial veins on the hand, arm, or elsewhere, it was quite evident that they moved, and in that wavy manner which has several times been noticed in the jugulars, but very rarely, I believe, over the system generally. The jugulars themselves were seen to dilate and contract alternately, much in the same way that a leech is observed to do when sucking.

"As to the arteries: 1st, the minutest twigs of this system of vessels are observed to pulsate. I cannot give a better idea of the extent to which this phenomenon has proceeded than by mentioning, that the small branches of the coronary artery of the mouth may be seen and felt to pulsate over the nose and up to the inner canthus of the eye; that in consequence of this inordinate action in vessels of so small a calibre the surface of the whole skin seems alive; that so enormous (for that is the word) is the impulse of the carotids and subclavians, on the paralysed side particularly, that at each pulsation the patient seems to receive a shock as if he were slightly electrified. 2. The arterial action of the paralysed side is nearly twice as strong as that of the other, affording a striking evidence of the independent action of the arteries. 3. The *thrilling purr* is most distinctly felt over the subclavians and carotids of both sides, but best on the side where the arterial action is least: on grasping the wrists of the patient within my hand, I also seem to recognise it in the pulse. This purr, according to Laennec, never occurs alone, but is always accompanied by the '*bellows blast*;' accordingly, 4thly, over whatever artery the cylinder is placed, a *bruit de soufflet* is heard: this, in the larger vessels, was always more perfect on that side where the arterial action was least, but it was easily produced in full perfection on the other by simply compressing the artery from above, and so diminishing its action; so that we may infer from this, that too much action in the arteries is destructive of this phenomenon. The *bruit de soufflet* is loud over the radial, ulnar, and other less considerable arteries; it is also attended with a sort of chirping, particularly at the right side. It extends likewise to the heart. The action of this organ is moderate and normal. A well-marked *bruit de râpe*, synchronous with the pulse, is heard over the third rib of the right side, near its junction with the sternum. As there is no deficiency in the natural impulse of the right ventricle of the heart, so there is no evidence of there being dilatation of this side; and we have here the remarkable phenomenon of *pulsation of the jugulars, without* this organic lesion of the heart, with which all writers on this subject have held it to be inseparable."

A case, the reverse of this, in which there was dilatation of the right auricle, without jugular pulsation, will be found in our department of Pathology, p. 203, No. 18.



## PATHOLOGY.

15. *Remarkable Instance of Hæmorrhagic Tendency in a Family.*—Dr. RIECKEN, a German physician, in a recent work, has given an account of a very remarkable hereditary transmission of the *hæmorrhæal diathesis* through several individuals in a family. The father of this family, Ernest P. was a husbandman and joiner, who had always enjoyed good health, and at the time of the publication of Dr. Riecken's work, in 1829, was in his eighty-sixth year. His second wife, by whom he had the children to be mentioned presently, was of delicate health. In her thirtieth year she was attacked with rheumatic gout, and, after this ceased, with curvature of the spine, asthmatic complaints, and frequent pain under the breast bone. By-and-bye signs of water in the chest came on, general dropsy followed, and she died of that disease in her sixty-sixth year. Neither the wife nor the husband was ever subject to hæmorrhage, or to petechial spots. This couple had twelve children, five sons and seven daughters, of whom four died of small-pox, one of eclampsia, and three boys and one girl of hæmorrhagy.

William Louis, one of the three boys, enjoyed good health till his fourth year, when he was attacked with bleeding from the left nostril, which continued, with occasional intermissions, for eight days, and was only arrested by stopping up both nostrils firmly with the *Boletus igniarius*, (zündschwamm.) Two days afterwards, he was seized with anxiety and a sense of constriction in the præcordia, attended by swelling and tenderness there, then with cold sweating and deadly paleness, and at length with vomiting of black fluid blood, which repeatedly returned, and proved fatal in the course of a week.—In another of the boys, John Christian William, blue spots, unattended with pain, frequently broke out on the skin between his first and eleventh years, but were not accompanied by hæmorrhage. In his tenth year he was attacked with violent rending pain in the extremities, more especially in the limbs, which abated in a month and a half, after a hard tumour formed on the left knee. This tumour had been present for a year and a half, when he was suddenly seized with violent tooth-ache in the foremost grinder of the left side of the lower jaw, and the pain was so excruciating that he consented to the extraction of the tooth. The tooth was quite healthy. A gush of fluid blood immediately took place from the cavity, and nothing could check it. The poor boy gradually became blanched like wax, and expired on the eighth day.—Philip Henry, the third boy, presented the appearance of blue spots on the skin, particularly of the buttocks, even during the first year of his life, yet without any signs of weakness. When a year and a quarter old, he died while vomiting fluid blood which had begun the day before, without any previous appearance of ill health. The daughter died four days after birth in consequence of hæmorrhage after the division of the frænum of the tongue.

The same striking constitutional infirmity likewise appeared among the grandchildren of Ernest P. born of his youngest daughter, Louisa Catherine. This woman, who is still alive, and in the thirty-second year of her age, is short in stature, and light haired, has gray eyes, and a delicate, fair complexion. She never had purple spots, or exhibited any tendency to hæmorrhage; nay wounds, and even apertures in veins made by the operation of blood-letting, healed in the usual manner. The menses commenced in her thirteenth year, and were usually rather abundant, and of eight days' continuance. She suffered much from tooth-ache and neuralgic affections of the extremities, was indeed seldom altogether free of wandering pains, and in her pregnancies was so much affected by a tendency to plethora that it was frequently necessary to withdraw blood. The blood coagulated more slowly than usual, was very dark, contained much serum, and presented a thin buffy coat. The hæmorrhage immediately after delivery, as well as the lochial discharge, was always profuse. Her husband is a stout, healthy man. They have had six children, four boys and two



girls, of whom only the eldest girl and youngest boy are now alive. The remaining girl died of convulsions when nine months old, and the three boys of hæmorrhage. The surviving girl is very healthy, and never had either blue spots or bleedings.

The four boys were all born easily, and the navel healed up without hæmorrhage. They all had a disproportionately large head, with unusually loose sutures, and fontanelles of uncommon size and slowly filled up. Their bodies were delicately and regularly formed, the nails were of the natural appearance, the skin fair and delicate, with the veins shining distinctly through, and the countenance pale, sickly, and bloated. They had all blue eyes, and one of them fair, but the three others black hair. Dentition went on in all in the usual manner. They were very lively, of mild dispositions, and the eldest showed much cleverness. The operation of vaccination, which was performed by incisions, was not followed by any untoward effects. All had from birth a very fetid discharge of a white, flaky, puriform mucus from each ear.

The eldest of these boys manifested a distinct tendency to hæmorrhage in the seventh month: dark, irregular spots appeared on various parts of the skin, varying in size from that of an *achtgraschen* piece to that of half a man's hand, and without any external injury; and these were at first pale red, but as they increased in size rapidly became bluish-black, and then reddish-blue, bluish-green, and dirty-yellow as they were disappearing. At times the body was entirely covered with them. They were attended with hardness and swelling, but not with pain. The first attack of hæmorrhage occurred in his first year in consequence of his having bitten the tip of his tongue, and it was not arrested till various artificial means had been tried in vain, and nature accomplished it after the child was reduced to the lowest possible state of exhaustion. When he was eighteen months old a second attack took place in the form of epistaxis, which was not checked till he was almost at the point of death: when it ceased under the use of the acid elixir of Haller and laudanum, and during the deep sleep which supervened. On his awaking, general convulsions attacked him; then deep sleep returned, and after this he awoke refreshed, and soon recovered. From this period till he was four years and a half old, he had regularly every three months an attack of epistaxis from the left nostril, which continued between four and ten days with occasional intermissions, and was preceded by lancinating head-ache, sounding in the ears, excitement of the pulse, flushing of the face, and lividity of the lobes of the ears. The blood was dark red, thin, without tendency to coagulation, and towards the close of the paroxysm pale dirty-red in colour. The hæmorrhage never ceased till the child, after repeated fainting fits, was brought almost to the point of death. In his fourth year he complained much of shifting pains, particularly in the left thigh, which were particularly troublesome before the customary bleedings or on any change of weather, but became much less so on a swelling of the knee-joint making its appearance. The swelling confined him for some time to bed; but it was diminished by proper remedies; upon which a fresh attack of hæmorrhage occurred; and after this the pains ceased. The child, however, was pale and exhausted, and in two days he died with all the symptoms of inflammation of the bowels. Sulphate of soda had no effect in checking the hæmorrhagies in this case.

In the second boy, the blue spots began to appear fourteen weeks after birth. When ten months old, a furuncle formed in the right arm-pit, which was carefully opened. At first pus alone issued; but afterwards violent hæmorrhage ensued, which continued for three days, notwithstanding the constant use of tents and compresses dipped in alum. After the lapse of nearly three-quarters of a year, an almost fatal hæmorrhage followed a trifling injury of the frænum of the lower lip; and this was not checked till on the third day the actual cautery was resorted to. After this, with the exception of the blue spots, the child was healthy, and became plump and strong. But when two years and a half old, plethoric symptoms began to show themselves as in his older brother's

case; and he was attacked with pleuro-peripneumony. Dr. Riecken avoided all evacuations of blood, and brought him through his illness by other antiphlogistic remedies. Suddenly, however, after a return of fever, copious bleeding took place from both nostrils, for which all the usual means, including Glauber's salt, were in vain put in requisition; and it was not till the child had repeatedly fainted, and was as pale as a corpse, and till the blood had in the end flowed for six hours as pale as bloody serum, that the hæmorrhage ceased spontaneously. Half a year afterwards he was attacked by flying pains in the extremities, followed by swelling in the left ankle, and, when this disappeared, by swelling in the left knee. Recovery, however, was gradually so far accomplished, that the child could walk again, when, in an accidental fall, a small wound not larger than a pin's head was inflicted on the point of the tongue. Profuse hæmorrhage commenced, and for five days it continued, although every conceivable remedy was tried, including three applications of the cauterizing iron, till at length the breathing and pulse ceased, the skin became icy cold, the eyes lost their lustre, and death was believed to be at hand. After a time signs of animation appeared; the hæmorrhage was found to have ceased, and the child became convalescent. In fourteen days he began to complain of occasional stitches under the ribs of the left side, accompanied with dry cough; and during a fit of coughing, blood began to gush from both nostrils. The blood was fluid, thin, brownish in colour and fetid. It continued to flow in spite of every remedy which could be thought of, and the little patient soon died slightly convulsed.

The third boy, in consequence of the frænum of the tongue being unskillfully divided, was attacked when three months old with profuse hæmorrhage, which lasted for three days, and only yielded after repeated applications of the actual cautery. The blue spots did not begin to show themselves till the sixth month. The plethoric symptoms observed in the two former cases appeared also in the present instance about the thirteenth month, and especially some weeks before his death, which took place after an attack of hæmorrhage of two days' continuance, occasioned by an injury of the tip of the tongue with an incisor tooth. On this last occasion repeated cauterization was of no use.

In the youngest boy, who is still alive, a chronic, itchy eruption of the face was added to the discharge from the ear, which he had in common with his brothers. Blue spots began to appear on the skin four months after birth. But subsequently to the administration of ass-colt liver-oil (!) to the mother, both the eruption and the livid spots disappeared. Whenever the mother intermitted the oil the spots reappeared; and whenever she resumed it, the discharge from the child's ear dried up, the spots ceased to form; nay, on one occasion he sustained a wound of the ring finger with a sharp knife, yet the hæmorrhage was not greater than in other children. Subsequently a furuncle on the shoulder was opened, and a second time a wound accidentally inflicted without any particular hæmorrhage. The further history of this case is not given.

Besides the mother of this family, Ernest P. had two other daughters, who, together with their families, never suffered from hæmorrhage or ecchymosis; but they were very liable to gout, rheumatism, chronic abscesses, and eruptions. Among his ancestors and collaterals there was no one ever liable to hæmorrhage; nor can the least relationship be traced between his family and any of the previously ascertained instances of families possessing this constitutional infirmity.

The author in his general remarks seems disposed to ascribe the constitutional hæmorrhagic diathesis to a gouty taint; but this is surely an erroneous idea, otherwise it ought to be much more frequently met with. In the present, as in every previously recorded instance, it is very remarkable that the infirmity was confined to the male branches of the family, and that, nevertheless, it was transmitted through the female branch to the males of the next generation.—*Ed. Med. and Surg. Journ. July, 1831, from Medizinisch-Chirurgische Zeitung, Nov. 15, 1830.*



16. *Case of General Emphysema produced by Combustible Gas.*—The following case was presented to the Royal Academy of Medicine by M. BALLY. A man, twenty-five years of age, was admitted in the Hopital Cochin on the fifteenth day of typhoid fever. He complained of violent pain in the left thigh, which, as well as the scrotum, was swelled; and in his delirium he talked of having been bitten in the knee by a dog; but no information to this effect could be procured after a diligent inquiry. He died on the day after admission; and in eight hours the body was examined.

Blood had issued from the nose, and from the surface of the skin of the thighs and head, where the cuticle had been stripped. The whole body was emphysematous, but especially the left leg. This was twice its natural size, had a brownish-violet colour, and was extensively covered with black and white phlyctenæ; and a reddish serosity, mixed with air-bubbles, issued from the black ones. This limb resounded when struck, and crepitated when handled. The belly was much distended with gases. The face and temples were livid; and when the skin there was divided a great deal of reddish-black blood issued. The brain and lungs did not present any unnatural appearance; the heart was pale and empty; the intestines presented the usual organic derangements observed in typhus, (enlargement, induration, and ulceration of the glands of Peyer and Brunner.) Bubbles of air filled the vessels of the pia mater and left saphena vein. The lymphatic glands of the mesentery were enlarged, and contained a gas which took fire at a candle and exploded. The same phenomenon was witnessed after scarifications of the legs, thighs, and scrotum. A puncture having been made in the belly, the gas which issued took fire also, and formed a flame blue at the base, white at the apex, and which burned for some time. The combustion likewise extended to the edge of the opening made with the trochar; and the edges became black and were consumed, so that the aperture was rendered of twice its previous diameter. The gas contained in the subcutaneous cellular tissue was inflammable like that in other parts.

M. Bally considers that this evolution of indammable gas was not a phenomenon which occurred after death only, and puts the question, whether the case throws any light on the spontaneous combustion of the human body?—*Archives G n rales*, Jan. 1831.

17. *On the Respective Prevalence of Pneumonia at different Ages, and in the Two Sides of the Chest.*—M. LOMBARD has given an account in the *Archives G n rales*, for January last, of some very interesting investigations made by him into the respective prevalence of pneumonia in the two sides of the chest, and his results show that in France the right lung is more frequently affected than the left. We take the following analysis of his labours from the Edinburgh Medical and Surgical Journal.

Uniting all the cases collected by Chomel, Andral, and himself, he finds, that in 968 patients 195 had the disease in both lungs, 260 in the left lung, and 413 in the right; so that for 455 attacks of inflammation of the left side there are 673 of inflammation in the right. Various explanations have been proposed of this fact. Some have ascribed its occurrence, more especially in young children, to the right being the side on which most individuals lie in bed; though how this circumstance should have the effect of predisposing to pneumonia we confess it is not easy to perceive. Others have ascribed it to the greater muscularity of the right side of the body; but this explanation is evidently inadequate, since M. Lombard clearly establishes that the difference between the two sides in liability to inflammation is at least as great in females as in males, and in young children as in adults. M. Lombard, on the other hand, considers that the explanation ought rather to be sought for in the anatomical structure of the organs; and he thinks that the difference in the size of the arteries sent to each side will account for the fact. "After the pulmonary artery," says he "has crossed the direction of the aorta, and has reached the level of the second dorsal vertebra, it divides into two branches, of which the right branch is the



larger and more directly transverse in its course, so that more blood must pass along it than along the left division in the same interval of time. The functional activity of the right lung is therefore greater than of the left lung; and it is well known that the frequency of inflammation is in the direct ratio of the functional activity of the organ. Such at least is the only plausible hypothesis which can be formed in the present state of science."

Several late authors have thought that pneumonia is more frequent in adults than in the young. But M. Lombard has been led to a different conclusion; which is, that it is most frequent in infancy, and in old age, and least frequent in the prime of life. The data on which he rests this statement are taken from various public hospitals. From the pathological examination of 206 infants between one day and eighteen months old, of 118 children between eighteen months and fourteen years, and of 1284 persons of different ages between fifteen and eighty-three, he infers, that pneumonia forms 3-17ths of all the organic derangements found in infants, who have died during the first eight days—that in the second week it forms 2-9ths—in the third week 3-10ths—between the sixth week and the end of the second month 2-9ths—between the second and sixth month 1-10th only. In the second year it increases again to 1-3d; from the second to the sixth year it forms between a fourth and a fifth; from the eighth to the eleventh between a fourth and a sixth; from the fourteenth to the nineteenth only 1-37th; from the nineteenth to the twenty-seventh about a ninth. From this period till the age of forty-seven the proportion is only a fifteenth; from this till the age of seventy-five a fourteenth, and above this an eighth.

18. *Aneurism of the Right Auricle without Jugular Pulsation.*—It is believed by some pathologists, that pulsation of the jugular veins is always present in cases of aneurism of the right auricle. Mr. BARNAN, however, of Glasgow, relates in the *London Medical Gazette*, for May last, an instance of hypertrophy, with dilatation of the right auricle, in which this symptom was not exhibited. The subject of this case was a man of seventy-five, of strong constitution, who died of dropsy. The right auricle was enlarged to twice its natural capacity and thickened, and the ventricle of the same side was moderately dilated; the left auricle was similarly affected with the right and to the same extent, but there was no valvular disease, or narrowing of any of the cardiac orifices, and the left ventricle was quite healthy. This case is further interesting, not only from dilatation of the auricles being a rare disease, but also as disproving the assertion of Laennec, that it is the consequence of disease of the corresponding ventricle, or of the valves.

19. *Case of Hydrothorax in a Child fifteen months old.*—M. LICHTENSTADT relates in a late No. of *Hecker's Annalen*, the case of a child fifteen months of age, and well-formed, who, without any appreciable cause, was suddenly attacked with oppression of the chest and great anxiety; strong and irregular throbbing of the heart; inability to remain in a horizontal position. The little patient died in a few hours. Upon dissection, both sides of the chest were completely filled with a limpid fluid; there was also a similar effusion within the pericardium. Neither the pleura nor the pericardium presented any signs of inflammation. Nothing remarkable was observed in any other part of the body.

20. *Enormous dilatation of the biliary ducts.*—M. BERARD has met with a case in which the biliary ducts were enlarged from twelve to fifteen times their natural size in the parenchyma of the liver. The patient had neither icterus nor obliteration of the ductus choledocus, but the biliary ducts contained many calculi.—*Rev. Méd. May and June, 1831.*

21. *Rupture of the Liver and Heart from a fall.*—M. DEBAYNE has communicated to the Anatomical Society of Paris, the case of a woman who died in

consequence of a fall from an elevated place. On examination the surface of the liver was found torn in many places, the tissue separating the two auricles of the heart, broken; and the left auricle torn to the extent of some lines.—*Rev. Med. June, 1831.*

22. *Fatal Hæmatemesis.*—M. RICHARD has met with a case of hæmatemesis in a young man addicted, since infancy, to the use of spirituous liquor, which proved speedily fatal. On examination, an ulcer was found near the cardiac orifice of the stomach, at the base of which the coronary artery of that organ was observed, opened by erosion, and from which of course the blood had flowed.—*Ibid.*

23. *Diffused Gangrene of the Lungs.*—Of this disease, LAENNEC met with but two instances, and therefore supposed it to be of rarer occurrence than it would seem to be from the researches of subsequent pathologists. During the past year M. BARNES communicated to the Anatomical Society of Paris, three cases of it. Five or six cases of circumscribed gangrene of the same organs, have also been related to that Society.

M. Cruveilhier considers as one of the pathognomonic signs of this disease, the expectoration of extremely fetid sputa, sometimes mixed with blood, supervening shortly after symptoms of acute pneumonia.—*Ibid.*

24. *Melærosis.*—M. CRUVEILHIER has, several times last winter, met with a peculiar species of this disease in the lungs. A specimen exhibited to the Anatomical Society of Paris, presented a filtration of a grayish-black colour, occupying a considerable extent of the lungs: in the infiltrated parts, the parenchyma of the organ was softened, pultaceous, reduced to a vascular net-work, and very readily tearable.—*Ibid.*

25. *On Obstruction of the Veins as the Cause of Edema or Partial Dropsy, particularly in the Lower Extremities.*—Some very interesting observations on this subject, by M. CORBIN, Physician to La Charité, are inserted in the *Archives Générales*, for April last. Various authors have indicated obstruction of the veins as the cause of certain partial dropsies, but the experiments of MM. Rayer and Bricheteau, who tied the principal venous trunks without any effusion being produced, seemed to have raised some doubts whether obstruction of the veins did in general give rise to dropsy. M. Bouillaud, in two valuable memoirs in the *Archives* for 1822 and 1824, completely established the fact, that dropsy does sometimes depend upon this cause, and he adduces cases in which obstruction of the abdominal vena cava gave rise to œdema of both lower extremities; obstruction of one iliac or femoral vein, to infiltration of one limb; that of the vena porta, to ascites; of the superior cava or of the larger trunks which join it on the right or left side, to infiltration of the whole face and upper extremities, or to one-half of the face and one arm. In this theory, Mr. B. includes passive dropsies alone, and not phlegmasia dolens.

M. Corbin's object is to illustrate one point only of this question, viz. where one inferior extremity alone is infiltrated, or a great deal more infiltrated than the other. Mr. C. has collected twenty cases in illustration of this point, seven of which he relates, and he thinks that they establish the proposition, that when one limb is infiltrated to a certain degree, and for a length of time, there is always a material obstacle to the circulation of the blood through the veins in that limb. Passive infiltrations, it must be remembered, alone are here referred to, and not phlegmasia dolens, nor that infiltration which coexists with certain erysipelatous inflammations, or that which follows these and other exanthematous diseases. Mr. C. states, that as far as his experience extends, it would not be justifiable to refer these last forms of œdema to obstruction of the veins, though future experience may show that they also are induced by the same cause.

Our readers know that M. Velpeau, Dr. Lee, and others, attribute phlegmasia dolens to obstructions in the iliac veins, and have adduced some facts in support of that opinion. We look upon this point, however, as yet unsettled.

The obstacle which impedes the circulation of the blood in the veins, may be of various kinds. Thus, a tumour situated in the course of the vessels, or the impregnated uterus, may produce the same effect as sanguineous concretions formed in the vessels, but most commonly it is these last that we find to be the cause of the obstruction.

26. *Remarkable Case of Dropsy.*—Mr. FOTHERGILL, of Selby, relates in the *North of England Medical and Surgical Journal*, for November, 1830, a case of dropsy occurring in a married lady, twenty-two years of age. This patient was attacked in 1815 with pain in the abdomen, and in the region of the kidneys, accompanied with that kind of constitutional irritation which usually attends diseases of the uterus. Her general health suffered, and the digestive organs were considerably disordered. The operation of paracentesis was had recourse to for the first time on the 11th of October, 1815, and between this and the 5th of December, 1828, it was performed one hundred and fifteen times, and upwards of seven hundred and ninety four gallons of water drawn off. The patient died on the 11th of December, 1828. On examination, her uterus was found enormously enlarged, and full of hydatids.

27. *Case of Momentary Suspension of Muscular Contractility and Sensibility—Disease of the Superior longitudinal Sinus.*—M. GASTRUC, of Bordeaux, in an interesting volume of memoirs and cases recently published by him, relates a very curious case of a child four years of age, who was subject to attacks of momentary suspension of voluntary motion. These attacks came on suddenly, without premonition, sometimes occurring whilst the child was playing; at others when she was in bed. They were not preceded or accompanied with any spasms or frothing at the mouth. The child suddenly lost, in severe attacks, all power over the muscular actions, and if standing, fell down, or if lying, became incapable of motion. The sensibility was also diminished. The senses were slightly weakened, but was still sensible to external impressions. The eyes were open and immoveable; her hearing was preserved; she also retained in part her intellectual faculties. In slight attacks she would endeavour to perform muscular movements, generally in vain. Thus, when food was presented to her, she would endeavour to take it, and would fret and cry at not succeeding. The duration of the attack was variable; it rarely however continued longer than a quarter of an hour. The intervals between the attacks was also very variable. Sometimes she had several paroxysms in a day, at others there was an interval between them of two weeks.

This patient died in 1828 of measles, and on post mortem examination, the principal abnormal structure found, was in the superior longitudinal sinus, beneath the sagittal suture. Its parietes were thickened, dense, and yellow; they resisted and crepitated under the knife; they were distended by a sort of blackish coagulum, in the centre of which more fluid blood was found. Between the coagulum and the parietes of the sinus, there was a yellowish concretion, of a fibrous appearance, and of near a line in thickness. The internal membrane of the sinus was redder than common, and presented, in a very marked degree, the reticulated structure, which it commonly possesses; there was no other contraction in the remainder of this sinus. The other sinuses were slightly engorged; the cerebral vessels were somewhat engorged, especially in the upper and right portion of the brain, and in the vicinity of the diseased sinus.—*Archives G n rales*, May, 1831.

28. *Pathology of Erysipelas.*—One of the late numbers of the *Journal Compl m ntaire*, contains some interesting remarks, by Dr. CONFIS, illustrative of the history of erysipelas. As we do not receive that Journal, we transfer to our



pages the following notice of Dr. Corbin's memoir, from the *London Medical and Physical Journal*.

"The principal objects Dr. Corbin has in view, are to offer a few comments upon certain forms of erysipelas which appear to deserve especial attention; to describe the state of the gastro-intestinal mucous membrane, in a certain number of persons who died of the disease; and also to adduce some examples in which erysipelas exerted a remarkable influence over other concomitant maladies.

"Phlegmonous erysipelas is frequently complicated with gangrene, but the latter condition arises in different ways. Mortification of the skin is generally consecutive to destruction of the subcutaneous cellular tissue: and in this case we can detect, before gangrene takes place, some signs of fluctuation, and, if the disease be abandoned to its course, ulceration occurs, and shreds of the cellular tissue, mingled with pus, are discharged; the external integuments are destroyed, and the muscles or aponeuroses are laid bare. In such instances, free incisions, if made at an early period of the disease, may prevent mortification, and, if at a later stage, they may limit its extension. The parts do not assume a black appearance, nor is there any gangrenous odour. In other, and less common cases, to which alone ought to be applied the term of gangrenous erysipelas, the gangrene commences in the skin, and is preceded by the appearance of phlyctenæ, or by the black and livid tint, and peculiar odour, of this class of disease. Here incisions have always appeared useless, and when they have been made, the edges of the wounds suffered more from gangrene than the other parts. Erysipelas of this last mentioned species is usually very severe: it is characterized from the commencement by prostration of strength, and is almost always quickly fatal. Such cases are, fortunately, rare. Thus, in erysipelas of the limbs, in nine cases out of ten, gangrene takes place after the suppuration and destruction of the cellular tissue. We frequently see pure phlegmonous erysipelas arise in the scrotum, and a part of it destroyed by mortification. Upon the face and hairy scalp, gangrenous erysipelas (confining the term to its proper limits,) is rarely seen; and when it does occur, the skin always mortifies after suppuration of the subcutaneous cellular tissue. This fact is illustrated by the following case, which is also interesting in some other respects.

"A man, forty-eight years of age, after having drank very hard, received a sabre wound, three inches long, upon the left parietal bone. He was admitted the next day, (March 3d,) into the *Hôtel Dieu*. Attempts had already been made to promote the immediate reunion of the divided parts, although, from the appearance of the wound, they were not likely to succeed. The adhesive plasters, which had been employed, were removed, and the lips of the wound were separated: the bone was not exposed, but at the anterior part of the wound, which approached the coronal suture, the fibres of the aponeurosis of the occipito-frontalis muscle were denuded. The edges of the wound were laid very gently together, and, as erysipelas was at that time very common, cold lotions were ordered, and twenty leeches were applied to the neck.

"On the 4th, the face was rather swollen.

"5th. Slight erysipelatous appearance on the right eye. Cold lotions continued, blister to the neck. The erysipelas continued to extend, but before it had reached its highest degree of severity, it disappeared entirely.

"On the 9th, there was seen at the bottom of the wound a yellow-looking substance, which was found to be the aponeurosis already mortified. The patient complained of being dull and heavy, and of a sensation of weight in the head, which was so painful that he could scarcely bear to rest upon his pillow.

"11th. Manifest fluctuation at the back part of the scalp, and extensive separation of the scalp from the bones. The abscess was opened, and a small quantity of pus was discharged. Much relief followed, and the following days no remarkable symptoms occurred. Mortification of the aponeurosis still continued, and shreds of yellowish-looking fibres were, from time to time, separated

from it. The patient still continued drowsy, but could obtain no sound sleep. Inflammation of the membranes of the brain, with violent fever, convulsions, and great prostration of strength, soon came on, and the patient sank, and died in a few days.

"Upon dissection, the lungs were found engorged with blood, and appearances of chronic gastro-enteric inflammation were detected. Upon the outside and upper part of the cranium, the cellular tissue between the bones and the aponeurosis was entirely destroyed. The surface of the bones was covered with a sanious discharge, and exfoliation of them had commenced. The pia mater was inflamed and thickened, and between this membrane and the arachnoid there was an effusion of pus.

"This case is remarkable, not only on account of the progress of the erysipelatous inflammation, but it shews also that a wound on the head may remain open, although the bones are not denuded. If the occipito-frontal aponeurosis is exposed, it exfoliates like a tendon, and often in a very gradual manner.

"Cases of erysipelas are occasionally seen, which appear to be intermediate between the superficial and phlegmonous forms of the disease. In such instances, there is but little swelling, no collection of matter, to any great extent, under the skin, but here and there small invuluted abscesses. In a patient named Mainvielle, after an attack of erysipelas of the face and scalp, several small abscesses formed in the neck, behind the ears, and upon the cranium. In another patient, after a similar attack, accompanied with enormous swelling of the face and scalp, an abscess formed upon the right upper eyelid, and numerous small collections of matter, from the size of a filbert to that of a cherry-stone, also formed upon the scalp. These abscesses remained for a long time very hard; some of them disappeared spontaneously, and others were opened, and healthy pus was discharged from them.

"External erysipelas frequently disappears from one part, while at the same time the disease attacks a more or less distant region of the body. Thus, in a man named Tessier, who was admitted into the Hôtel Dieu, erysipelas of the leg and foot disappeared when the face became the seat of the disease, and the parts originally affected were again attacked when the face recovered. Erysipelas also frequently exercises a revulsive influence upon internal diseases. A young man was attacked with acute pulmonary catarrh: he was bled frequently, but without decided advantage; he was much oppressed, skin hot, pulse hard and quick. He was attacked with erysipelas of the nose, which quickly extended to the face and scalp. The feverish symptoms increased, and he became delirious. Leeches were applied to the neck, and he was bled in the foot; in a few days the erysipelas disappeared. From the time that the external inflammation appeared, and while it lasted, the patient breathed freely; there was less expectoration, and, in fact, there was every reason to believe that the bronchitic affection had ceased. It might at first have been presumed that this diminution of the symptoms depended as much upon the repeated abstraction of blood, as upon any revulsive influence of the external inflammation: but no sooner had the erysipelas ceased, than the cough, oppressed breathing, and other indications of bronchitis, reappeared with increased severity, and it was again necessary to have recourse to venesection.

Phlegmonous erysipelas of the lower extremities, of the most severe kinds, is very often produced by the slightest external causes: either from excoriations, slight wounds, the neglect of old ulcers, or by applying stimulating remedies to them; and sometimes simple contusions are sufficient to produce the disease, as in a man named Wivet, among other similar instances, who died in three days of erysipelas, in consequence of falling upon his knee. Sometimes no external cause can be detected.

When we oppose to these cases numerous instances of other patients, placed in the same circumstances, or even affected, during the same season, with much more severe external lesions, and in whom, notwithstanding, no erysipelatous disease is developed, we must presume that, in the former, there existed some



peculiar disposition, or, to speak less vaguely, a lesion of some important organ, and particularly of the abdominal viscera. The idea is confirmed when we detect a red and dry tongue, head-ache, sensibility in the epigastrium, an inflated state of the belly, diarrhœa, or enlargement of the liver: but the results of dissection in eleven fatal cases of erysipelas, afford the most satisfactory proof of the accuracy of this opinion.

"In the first, a patient named Tupin, the mucous membrane of the stomach was nearly of a black colour, and softened throughout the region of the pylorus: the commencement of the duodenum exhibited the same appearances. Almost the whole of the small intestines, to within an inch above the cæcum, was of a deep violet colour. In the large intestines, some of the glands were hypertrophied, and appeared like small pustules.

"In the second case, a patient named Pflüg, stomach highly coloured in different parts, with patches of a red and brown appearance; the colon, throughout its whole extent, of a deep red colour.

"CASE III. Durantou: Appearances of chronic inflammation of the stomach and duodenum, characterized by reddish tubercles; rectum distended with faeces.

"CASE IV. Leerbier: Peritoneum of a red colour, with serum. Stomach, patches of brown and black colour. Duodenum, a circular ulceration, about the size of half a crown.

"CASE V. Scheier: Mucous membrane of the stomach softened, and of a dark slate colour; the submucous cellular tissue of the duodenum deeply injected; red patches in the cæcum.

"CASE VI. Wivet: The mucous membrane of the stomach and duodenum softened, and of a gray colour, throughout nearly its whole extent.

"CASE VII. Debry: In the stomach, near the cardiac orifice, was found a smooth hollow tumour, the size of a small renette apple, containing bloody serum. The whole surface of the stomach of a dark colour.

"CASE VIII. Tronnet: The mucous membrane of the stomach softened, and generally pale; small red spots on the great curvature.

"CASE IX. Lefebvre: Liver studded with gray tubercles; spleen softened, and of a large size.

"CASE X. Lambert: The mucous membrane of the stomach of a deep slate colour.

"CASE XI. Delgutte: Biliary calculi were found.

"Thus, with the exception of the last two cases, in which no striking morbid appearances were detected, in all the bodies there were considerable lesions of the abdominal organs. If we compare these results with our observations during life, it will be difficult to deny that most cases of erysipelas depend upon some internal cause. If such be the most frequent cause of erysipelatous diseases, it may appear singular to attribute to these maladies a decided influence over the progress of internal inflammations. This influence is, however, very evident, and not more astonishing than other revulsions effected by nature or art. No fact is better ascertained than this kind of antagonism, which is established, in certain cases, between the skin and internal mucous membranes, and especially the gastro-intestinal. Hence the use of purgatives and emetics in the treatment of erysipelas: but these means should only be employed when the digestive powers are healthy, or at least when there is simple obstruction of the stomach and bowels. In similar instances to those above-described, we must, it is true, act principally upon the abdominal organs, but antiphlogistic and emollient remedies can alone be employed with safety."

29. *Amnesia*.—M. Cassin has communicated to the Royal Academy of Medicine of Paris, the following interesting case of cerebral disease with the loss of memory of words. A man was attacked with hemiplegia, which was relieved by bleeding and blistering. Shortly afterwards he experienced incipient ama-



rosis in both eyes with pain in the head and noise in his ears. After some time hemiplegia returned. The patient then lost the memory of words, so that he could not name the commonest things; his mind in other respects was unimpaired, and all the organic functions were properly performed. He could also read fluently. He remembered objects, for he drew them upon paper, but he forgot the names by which they were called. The sight of a female whom he loved excited him and momentarily restored the faculty of language he had lost. He complained of insomnia, heaviness of the head, difficulty of muscular action, weakness of sight and hearing, &c.

This case is analogous to that of the notary, recorded by M. Binet in his nosography, who, after an attack of apoplexy, forgot his own name, that of his wife, and of his children, but remembered the places where his clients' briefs were deposited. M. Larrey has also related an instance of the loss of memory of words, following a wound. Professor Broussonet has also recorded an instance in which there was a loss of memory of substantives, while that of adjectives was preserved; it followed apoplexy; and a similar case is recorded by Dr. Camberet in the *Journal Complémentaire*, for February, 1819. Three analogous cases will also be found in this Journal; one by Dr. Jackson, Vol. III. p. 272, another by Dr. Chailly, p. 452 of the same volume, and a third by Professor Dickson, Vol. VII. p. 359. This last has the closest resemblance to the case of M. Cassan.

30. *Spinal Irritation*.—The subject of spinal irritation has of late attracted considerable attention. The following cases related by Mr. Wauk, of Dunlop, in the *Glasgow Medical Journal* for May last, tend to throw additional light on this very interesting affection.

Case 1. 3d April, 1826. J. H. Weaver, æt. 49, of shattered constitution. Complains of dull pain at breast, with incessant cough, almost preventing sleep, copious muco-purulent expectoration, dyspnoea, palpitation of heart, head-ache, and profuse nocturnal sweats; pulse 95, bowels confined. Has been ill four months, and treated with blisters to the breast, and cough mixtures, without benefit. Dorsal vertebræ, about 6th, 7th, and 8th, are painful on pressure; pain stretching forward to breast, so acutely as to cause him to cry out. He had his bowels freely opened with purgative medicine, was confined to the horizontal position, and a blister was applied over pained part. 8th April. Blister after several applications discharges freely, but has produced a good deal of febrile excitement, which is subsiding. 12th. Blistered surfaces healed, and all the symptoms mitigated; pain in spine confined to one spot. The blister repeated, and kept open about eight days, restored him to his usual good health. This patient had been given up for consumption, and certainly he bore some marks of phthisis. It appeared, however, to be merely chronic bronchitis, combined with spinal irritation.

Case 2. 22d June, 1828. H. B. æt. 21, a woman of stout habit, has been subject to cough for several years; for eight or nine months has complained of pain in right side of chest, nearly constant, increased on inspiration and coughing; weight and oppression at breast, difficulty of breathing, dry convulsive cough, occasional head-ache, and dullness of spirits. Pulse 90, full, tongue moist, bowels natural, catamenia regular. Was bled to 12 ounces, and had a small blister applied to the breast with very little relief. 3d July. Symptoms worse. The 3d, 4th, and 5th dorsal vertebræ are tender on pressure, particularly on right side, pain stretching acutely forward along the course of the intercostal nerves, to pained part inside of chest, causing dreadful convulsive coughing. The horizontal position was strictly enjoined, and 12 leeches ordered to pained part of spine, which gave immediate relief, this was followed by a small blister kept open for a few days. 10th July. Expresses herself greatly relieved, cough and other symptoms nearly gone—three leeches more completed the cure. About a year and a half afterwards, this girl being attacked with small-pox, the same symptoms recurred, but subsided with the fever.

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**Case 3.** 5th June, 1829. Mrs. A. æt. 33, mother of six children, of delicate constitution, complains of intense pain of right side of head, which appears a little swollen, dry cough, pain and oppression at breast, little increased on deep inspiration; respiration hurried and laborious, pain and numbness about shoulders, stretching down arms, palpitation of heart, great debility, is fatigued on the slightest exertion, or even speaking; pulse 112, weak and irritable, bowels costive. Upper dorsal and lower cervical vertebræ are painful on pressure, most severe about 3d and 4th dorsal; pressure aggravating symptoms. Had a child about three months ago, and did not recover well; three weeks afterwards was affected with violent pain at breast, for which she was three times bled, and as often blistered, with but partial relief. Has consulted three medical men, who uniformly recommended blistering the breast. Is much reduced in body, and considered by herself and friends to be consumptive. Three days previous to seeing her, she had come fifty miles by land and water for the benefit of sea air, and had caught a cold on her passage, to which she attributes the aggravation of her complaints. Day before this, had of her own accord, applied twelve leeches to side of head without benefit. She had two blue pills at bed-time, followed in the morning by a full dose of salts and senna, which procured copious evacuations with abatement of head-ache and febrile symptoms. Was ordered twelve leeches to upper part of dorsal vertebræ, to be followed by a blister. As she lived a considerable distance from me, it was ten days before I again saw her. She was now so much better, that she was able to walk about, without fatigue; appetite and strength improving every day. Is still suckling her child; says she has not enjoyed such health since delivery, and describes her feelings after leeching as if something were wanting about her breast; blistered surface has discharged well, but is now healed. Pain in spine confined to between 3d and 4th dorsal vertebræ, and much easier. Nine leeches, and a small blister about the size of a crown-piece kept open about eight days, removed her whole train of symptoms. I saw her about four months afterwards with slight return of same complaint, which was easily cured by the same treatment. In this case, the horizontal position was only enjoined a few days at first. In some cases the horizontal position is a *sine qua non* in the treatment; in others it is by no means essential.

**Case 4.** 23th Aug. 1829. I was called to Miss B. æt. 20, of delicate habit, who said she was ashamed to see me, as she could not tell what she had to complain of, only she felt weak, and her appetite was gone. Pulse 80, feeble, tongue moist, bowels natural, catamenia regular; stoops much, body reduced to a skeleton, so dull in spirits that she can scarcely be roused to the least exertion. On strict interrogation, admits having a slight feeling of weakness or weariness at breast. Upper dorsal vertebræ are tender on pressure, most about the fourth on left side; right quite free from pain, pressure aggravating symptoms at breast. About six weeks ago, after assisting the maids a short time at a washing, her hands and forearms became covered with a florid eruption, which soon disappeared, and was succeeded by a slight cough and uneasiness about chest, which have since gradually worn away. Was treated with a solution of tart. antim., bark, and other tonics, but without effect. Six leeches were ordered to pained part of spine, which procured immediate relief. She was now sensible she had been labouring under more oppression at breast than she had been aware of. A small blister produced such constitutional derangement, and aggravated the symptoms so much, that I did not think of re-applying it. A few leeches were applied every second day for a while, making in all thirty-one, which along with the horizontal position, greater part of the day, effected complete recovery. During the application of the leeches she uniformly felt herself getting better, symptoms returning a little before next application, which gradually wore off towards the end. In less than four weeks her health and strength were completely restored.

**Case 5.** M. C. æt. 23. In summer, 1826, I attended this girl in fever. She was advanced in the disease, and had been neglected before I saw her; was



treated with local bleedings, blistering, emetics, purgatives, &c. as symptoms indicated. Her recovery was slow, and accompanied with a host of nervous and hysterical symptoms, which have continued more or less ever since. About two years ago the abdomen getting enormously distended and communicating a doughy feel to the fingers, there was little reason to doubt that her bowels were loaded with feculent matter. A course of purgative medicine was ordered, which brought away a prodigious quantity of dark pitchy looking faeces, mixed with mucus and slimy matter. The belly, however, continued nearly of the same size, but a little softer; the stools were less in quantity, but much the same in appearance. Her strength getting exhausted, and her faith having failed her, I was obliged to abandon the practice. About six months after this she complained of pain in right hypochondriac region, aggravated on pressure, with frequent attacks of bilious vomiting; upon questioning her she admitted having pain about shoulders, particularly on right side. Several medical gentlemen saw her, and she was more than once blistered over the region of the liver, and salivated with mercury, to no purpose.

On the 18th of December, 1829, I was again called to see her. She had been getting worse for some months, and is now confined to bed. Complains of pain and giddiness of head, pain and numbness about shoulders and arms, particularly right arm; dull pain over region of liver and abdomen, most acute about caput coli, occasionally stretching down thighs: is much harassed with vomiting of acrid bile; eyes weak; speech has been hesitating for some months, is worse of late, stops often in the middle of words; abdomen reduced to natural size and feel; bowels open; pulse eighty, weak; menses have made their appearance all along, but a little irregularly. Says she is pretty easy while lying in the horizontal position, but all her symptoms are aggravated on getting up: gets so faintish in the erect position, that she is soon obliged to lie down. These symptoms led me to suspect the spine to be in fault: it was accordingly examined, and found tender throughout its whole extent, but particularly the cervical, lower dorsal, and middle of lumbar vertebræ; pressure, or the application of a sponge dipped in hot water, on the lumbar vertebræ, gave pain, aggravating pain in abdomen, and particularly at caput coli; pain shooting down thighs, along the course of crural nerves. On pressing the inferior dorsal, pain stretches forward to right hypochondriac region, which she describes as distinctly the pain she has so long felt there: pressure on the inferior cervical produced a feeling of pain and numbness about shoulders, stretching down right arm, which has not had proper feeling for some months: but the most remarkable symptom of all is in the upper cervical; slight pressure there increases the shooting pains over the head, and causes a feeling of constriction about the throat, increasing the impediment in speech, and causing difficulty of respiration. When the pressure is increased, the pain becomes intolerable, the function of voice ceases, and the respiration is as completely stopped as if she were suspended by a rope round the neck. Whatever part of the spine was pressed on, pain was felt shooting along the course of the nerves, but most severe on the right side. The upper cervical and inferior dorsal were the two points most severely affected, and from which I judged it not unlikely the pain might spread along the spine: these I resolved first to attack. Six leeches were applied to upper cervical, and same number to lower dorsal vertebræ. These were repeated with relief, and two small blisters were afterwards applied. In five days, when I again visited her, I found that the leeches had bled very freely, and had produced considerable debility: her face was pale and blanched, and she could with difficulty turn in bed. The blistered surfaces discharged for about a fortnight. It was a month before she gathered much strength: these symptoms, however, were mitigated, and she spoke more freely. By the beginning of April she was able to be out of bed the greater part of the day, spoke without hesitation, and was nearly free from former symptoms, but dorsal vertebræ, between ninth and tenth, were still a little tender. By the middle of June she could take exercise out of doors, had a good



appetite; and the spine was sound, except between ninth and tenth dorsal vertebræ, where there still was tenderness on pressure, shooting through to right side, in which she still felt some uneasiness. Considered herself in better health than at any time since attack of fever.

The horizontal position may have been a good adjunct here, but that it was essential to the cure does not appear, as she was obliged to keep it most of the time for nearly six weeks before the treatment commenced, notwithstanding which she became every day worse. That the origin of the nervous system was in fault since fever, I doubt not, and that timely detection and timely treatment might have saved her from nearly four years' suffering and misery, and preserved her constitution from a shock from which it can never fairly rally, I as little doubt. The pain in side and shoulders and vomiting of acrid bile, were certainly symptoms of inflammation of the liver, but it is plain it was merely suffering in function, from disease of its nerves, as the heart and stomach are often known to do from the same cause.

*Case 6.* A few weeks ago I was called to see a young woman twenty-one years of age, whose prominent symptom was vomiting of every thing she took. She had pain in right hypochondriac region, increased on pressure, and pains about shoulders, shooting down right arm, which she describes as stitches. Had a child in the sixteenth year of her age, from which she dates the commencement of pain in side; pain in shoulders more recent; dyspepsia of some years' standing, but vomiting has only been distressing of late. Has been often bled and blistered for pain in side, (supposed to be hepatitis,) and sometimes with partial relief. Had consulted a medical practitioner a few days ago, who ordered a large blister to be applied over region of liver. Ninth and tenth dorsal, and fourth, fifth, and sixth cervical vertebræ, are painful on pressure, the pain stretching to pained part in side and shoulders. Nine leeches were immediately applied to ninth and tenth dorsal vertebræ, and, in a few days, same number to inferior cervical. Eight days after this, she came a distance of about four miles, to show me how much improved she was. Vomiting gone, pain in the shoulders and side much better, lies in bed most easily on right side, which she has not been able to do since she had the child; pained parts in spine still a little tender. Leeches ordered to be reapplied.

I saw her about a week ago, stout in body and looking well. Says that she enjoys excellent health, to which she has been a stranger for more than five years. The horizontal position was not observed in this case.

I have only met with one case of this kind which defied remedial measures; the prominent symptom was tickling cough: time, however, effected the cure. Several cases have been relieved, although they could not be said to be cured. This disease sometimes accompanies consumption, yet in one case I had strong reason to believe that it roused up fatal tubercular phthisis.

That this class of complaints is seldom seen, except in the debilitated walks of life, appears to be unfounded. Any thing here, in place of a town, scarcely deserves the name of a village. My practice is entirely in the country, in a place, too, famous for the salubrity of its air, and the healthiness of its inhabitants; yet in such a place spinal irritation holds no inconsiderable rank in the catalogue of human calamities.

As a stimulus to the younger candidate for medical eminence, I may be allowed to mention that, in the diagnosis and treatment of no other disease have I gained so much credit and confidence in families. I have cured several who have been long considered to be falling victims to consumption, the gaunt and unrelenting destroyer of mankind. Restored to the arms of their families and friends from a long period of hopeless sufferings, they often know not in what terms to express their gratitude.

31. *Ulceration and Perforation of the Heart.*—An instance of this is recorded in a late number of *La Lancette Française*. The subject of this case was a female fifty-one years of age, admitted into the Hôtel Dieu on the 8th of March

last. She exhibited some obscure gastric symptoms, and could very imperfectly describe either the nature or seat of her complaints. Her tongue was pale and slightly furred; *her pulse regular*, rather more frequent than natural; bowels inactive. Her disorder appeared so slight that little attention was paid to her. Eleven days after her admission she suddenly died. A short time previous she had been tranquilly conversing with her neighbour, and did not make any complaint of pain or unusual uneasiness.

On examination the left ventricle was found perforated at its posterior and middle part by an ulcer, or apparently two ulcers, one commencing internally, the opposite to it externally; at least the shape of the hole gave that idea, it being larger externally and internally than in the centre, and therefore presenting an hour-glass figure. The fleshy substance of the heart was not softened, except for a short distance around the ulcers. Thick, red, fibrous layers were found on both surfaces of the heart. The heart was enlarged, but without any thickening of its parietes. The ventricular valves and orifices of the vessels were normal.

#### MATERIA MEDICA AND PHARMACY.

32. *Combination of Nitre and Calomel.*—M. BURDACH states in a recent German Journal, that the addition of nitrate of potash prevents calomel from producing salivation, the nitre causing its prompt expulsion by stool. This combination he also asserts to be a powerful derivative, and relieves the head, the chest, and the liver, more effectually than either of them will do separately. Certain diseases, as hydrocephalus, croup, &c. he adds, require large doses of calomel, and if this medicament is not eliminated from the system, it becomes a poison: the addition of nitre prevents this unfortunate result.—*Gazette Médicale*, July, 1831.

33. *Correcter of Opium.*—According to M. PUCHELT, a German physician, the sulphate of soda is an excellent correcter of the unpleasant effects of opium, given in the proportion of a scruple to half a grain of opium. This dose may be repeated two or three times a day. In combination with Glauber's salt, opium he says, may be administered in cases where slight plethora, local or general, prevents recourse being had to opium alone; in obstinate hæmorrhages, principally, this mixture will produce the happiest effects. But if sulphate of soda prevents the congestion which opium sometimes produces, M. P. says that there is another article which corrects its narcotic, without diminishing its sedative, effects—this is the castor. The combination of opium and castor he considers very useful in cases of hysteria.—*Ibid.*

34. *New Process for preparing Medicinal Prussic Acid.*—MR. THOMAS CLARK, describes in the *Glasgow Medical Journal* for May last, the following process for preparing Medicinal Prussic Acid, by which, he says, that every Apothecary may make that article cheaply, and of uniform strength.

"Take of Tartaric acid, 72 grains; Cyanide of potassium, 32 do.; Distilled water, an ounce.—In an ounce phial, furnished with a cork or stopper, which should, by previous examination, be ascertained to be sufficient, dissolve the tartaric acid in the water. Then add the cyanide of potassium, and immediately thereafter insert the cork or stopper, which for a little must be preserved firmly in its situation by the finger. Meanwhile agitate, keeping the phial immersed in a basin of cold water, in order to repress the heat produced in the process. When all action has ceased, set the phial aside in a cool and dark place for twelve hours, in order that the cream of tartar formed may subside. Afterwards decant the liquor, which preserve in a phial in a cool and dark place."

Those who are accustomed to chemical calculations, will easily perceive that



the following result ensues:—We employ Tartaric acid, 72 grains; Cyanide of potassium, 32 do. Total, 104 grains.—These produce, Cream of tartar, 91 grains; Hydrocyanic acid, 13 do. Total, 104 grains.

But an ounce of water dissolves no more than about five grains of cream of tartar, and its soluble power is likely to be diminished by the presence of hydrocyanic acid. Therefore all the cream of tartar formed, except five grains, that is, 86 grains, will subside; and the water will hold in solution, besides those five grains of cream of tartar, 13 grains of hydrocyanic acid. But this solution will contain about 26 full doses (we will say 25) of hydrocyanic acid. Of cream of tartar, therefore, each dose will contain only 5.25, or one-fifth of a grain. The presence of this small quantity of cream of tartar would be regarded as an impurity by chemists, who would separate it by distillation. But little regard will the physician give to the presence of cream of tartar, amounting to the fifth of a grain in a dose. In employing prussic acid, indeed, the objects of the chemist and of the physician are altogether different. Purity is the desire of the chemist; uniformity of strength that of the physician. A disregard of this difference has too often in pharmaceutical processes caused chemical purity to be dearly purchased at the expense of medicinal uniformity.

"In the above process, provided we retain the same quantities of tartaric acid and of cyanide of potassium, it is plain that, by varying the water, we may obtain a solution of prussic acid of any given strength. The above formula is adapted to the strength suggested by Vauquelin, namely, water one ounce, to the prussic acid which may be obtained from one drachm of cyanide of mercury; for this yields the same quantity of that acid as 32 grains of cyanide of potassium. This strength of Vauquelin is that most generally in use in this country; and it has been adopted in the last edition of the Dublin Pharmacopœia. Magendie's solution of prussic acid is about four times as strong.

"In the common processes for preparing prussic acid, one great cause of the various strengths produced by those processes, is the great volatility of prussic acid. To be aware of the great risk of loss by this volatility, put a drop of a solution of pure hydrocyanic acid on a bit of litmus paper. This paper will be immediately reddened, as by any other acid; but, so very volatile is this acid, that the redness will vanish in two or three minutes, ere the drop has visibly diminished in size. But the solution will be affected in its strength by this volatility of the acid, not merely according to the manner in which it is prepared, but also according to the manner in which it is preserved. Here, the volatility being too little feared, is too little guarded against. I would enforce, therefore, great care as to the sufficiency of the cork or stopper; and the precaution of inverting the phial is worthy of adoption. The further precautions of excluding light and avoiding heat are necessary to prevent a spontaneous decomposition which prussic acid sometimes undergoes."

35. *Ioduret of Lead*.—From the experiments of Drs. COTTEBEAU and VERDE DELISLE, made at the hospital de la Pitié, in the wards of M. VELPEAU, it appears, that of all the preparations of iodine, the ioduret of lead possesses, in the highest degree, the property of resolving scrofulous and scirrhus engorgements.—*Journal Hebdomadaire, April, 1831.*

36. *Solution of Cantharides*.—Sir CHARLES SCUDAMORE recommends as a substitute for the common blister, a solution of cantharides in concentrated acetic acid. This solution is rubbed on the surface of the part which it is wished to vesicate, with a small varnishing brush, for about two minutes, or until a slight flush of redness is perceived. In less than the usual time, free vesication is produced, and a copious discharge of serum follow:—*London Medical Gazette, June, 1831.*

37. *Formulæ for the exhibition of Hydriodate of Iron*.—*For a Bath.* R. Hydriod. ferri, ℥ij. aquæ, q. s. M. The quantity to be progressively increased, for adults, by



half an ounce at a time.—*For Lotions, Injections, &c.* R. Hydriod. Ferri, ℥ss. Aqua Distillat. ℔ij. M.—*For Pastiles.* R. Hydriod. Ferri, ℥j. Croci Stigmat. ℥viii. Sacchari, ℥viii. Gum Tragacanth, q. s. Fiant Pastil. 240. Eight or ten to be taken in the course of twenty-four hours, and the dose augmented by one every three or four days. They are recommended in enlargement of the cervical glands, in chlorosis, and particularly in amenorrhœa.—*For Ointment.* R. Hydriod. Ferri, ℥ss. Adipis, ℥j. M. The size of a small nut to be used night and morning, rubbed into the thighs, in amenorrhœa and in leucorrhœa.—*For Tincture.* R. Hydriod. Ferri, ℥ij. Alcohol. Camphoræ, aa. ℥ij. M.—*For Wine.* R. Hydriod. Ferri, ℥ivss. Vini (*Bordeaux*) ℔ij. M. A table-spoonful to be taken night and morning by adults, in scrofulous affections, &c.—*Lon. Med. Gaz. Aug. 1831.*

38. *Medicinal Properties of the Sulphuret of Carbon.*—The sulphuret of carbon, though discovered by Lampadius, in 1796, has not yet been introduced into the medical dispensaries. MM. Wutzer and Pellingham have lately investigated its properties with the following results:—

1. The sulphuret of carbon is one of the most powerful of the diffusible stimulants yet discovered.

2. It excites powerfully the activity of the heart and arterial system. •

3. Its internal use quickly determines acceleration of the pulse, increased heat, and sanguineous congestion towards the skin, and genito-urinary apparatus.

4. The most remarkable secondary symptoms are, abundant diaphoresis, increase of the urinary secretion and of the menstrual discharge.

5. It has been used with the utmost success as a remedy in chronic rheumatism, and in gout where no fever simultaneously exists.

6. The dose in which it is fit to give it internally, is from three to eight drops, in any convenient liquid vehicle, or on a bit of sugar. It is also very useful as a liniment, which may be formed with sulphuret of carbon, ℥ij. and camphorated alcohol, ℥iv.; olive oil may perhaps be advantageously substituted for the camphor solution.—*Journal de Chimie.*

39. *Formula for Nitrate of Silver Ointment.*—The following is the formula given by Mr. MIDDLEMORE for this ointment:—R. Argent. nitratis, gr. ij.; Liq. plumb. acetatis, gtt. xv.; Ung. cetacei, ℥j. M. The quantity of nitrate of silver may be gradually increased to six or even seven grains, as the eye becomes accustomed to its use. It is highly important that this ointment should be carefully prepared, and that the various substances of which it is composed, should be accurately blended; and that the nitrate of silver should be reduced to an impalpable powder before it is mixed with the spermaceti ointment. The ointment should not be used after it has been prepared for a longer period than twelve or fourteen days.

Mr. Middlemore directs the ointment to be applied in the following manner. Having placed a portion of the ointment, about as large as a small split pea, upon the blunt extremity of a probe, take hold of a few of the eyelashes, and a portion of the surrounding skin, and elevate and slightly evert the upper lid; then direct the patient to look downwards, smear the ointment upon the upper part of the eyeball, and withdraw the probe on the temporal side of the eye; in this way the ointment becomes thoroughly dissolved, and equally diffused over the whole of the corneal surface. •

Mr. M. employs this ointment in various affections of the eye.—*Midland Medical and Surgical Reporter, August, 1831.*

40. *Asparagus as a Sedative.*—The *Gazette Medicale* of the 28th of May last, contains a memoir by M. EUGÈNE DE SALLE, on this subject. The attention of the profession was first called to the sedative properties of asparagus by M. Broussais about two years since. (See this Journal, Vol. V. p. 499.) The diuretic property of this vegetable is known to every one; M. de Salle attributes to it

another, which we confess never to have observed. He says that it excites, in persons whose larynx is susceptible, in half an hour or an hour after it is eaten, a violent constriction of the throat; there is a considerable irritation of the larynx, and the glottis has a tendency to spasmodic contraction. This painful state ordinarily ceases in about twenty minutes. For a knowledge of its calming property, we are indebted to a gentleman, not of the profession, affected with a chronic irritation of the heart, and who observed that he suffered much less after eating asparagus. As this vegetable could be obtained but for a short season, this gentleman applied to M. Johnson to prepare for him a syrup, which he might take when the plant was not to be procured. M. Johnson, anxious to obtain, in an isolated state, the active principle of the vegetable, undertook, with the aid of MM. Vauquelin and Robiquet, its analysis. He ascertained that the constituent principles of the asparagus, are asparagine, a green resinous matter, wax, albumen, phosphate and acetate of potassa, and finally, mannite. Upon experiment, the asparagine was found diuretic, but not sedative, and the green resin slightly sedative; the combination, however, of the asparagine and the green resin was found most efficacious.

In our seventh volume, p. 232, we published the method recommended by Chevallier for preparing the syrup of the asparagus; the following is that employed by M. Johnson:—Take eight pounds of asparagus, cut it in small pieces, bruise it, and express the juice by a strong pressure. Evaporate the juice to a syrupy consistence, then allow the asparagine to crystallize; decant, and again evaporate the liquid to a dry extract.

Take the green part of the asparagus shoots, and macerate them for fifteen days in half their weight of alcohol, at 22°. Express, and take enough of it to entirely dissolve the dry extract; when the extract is dissolved, evaporate, to remove from it the alcohol. Use this to dissolve the asparagine, and then make the syrup.

We hope that some of our pharmacutists will undertake to investigate the active principles of this plant, and the best mode of obtaining it, and will form a preparation of it, to enable physicians in this country to determine its therapeutic properties. If it really possesses those attributed to it, there are many cases in which it is calculated to afford important relief. M. de Salle relates two cases of distressing palpitation of the heart, in which the most manifest relief followed its administration.

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#### PRACTICE OF MEDICINE.

41. *Treatment of Croup.*—In the second number of our esteemed cotemporary, the *North of England Medical and Surgical Journal*, there is an interesting paper on the treatment of Croup, by W. GORDON, Esq. of Bury, and as the author's views differ in several points from those usually received, we shall lay an account of them before our readers.

When effusion has taken place in this disease which may be known by a rattling respiration, with disposition to sleep, pale or livid lips, and cold extremities, Mr. G. says that death must follow, and that it will be accelerated by the remedial means we should otherwise employ. "But so long," he says, "as the attack is accompanied with a high sounding cough, without rattling, the mischief whatever it may be, is not irremediable; I would go much further, and declare it ought to be arrested, and feel a perfect conviction, in the majority of cases, that it may.

"I am aware that there are instances on record, where death has taken place, though no effusion could be discovered afterwards. These cases probably gave rise to the doctrine of spasm, regulated the treatment in many cases, and still are quoted with more observance than they appear to me to deserve. But granting their validity, it has not yet been proved that a more active treatment



would not have saved life; nor is death, under such circumstances, a common occurrence, where no remedies have been used. Amongst the poorer classes in Lancashire, who seldom call in assistance for croup, until all chance of recovery is destroyed, I have never yet seen a case terminate fatally, without an effusion in the bronchia being conspicuous several hours before death; and I am much disposed to attribute such an event where it has happened, to the remedies made use of, rather than consider it a natural termination of the disease; particularly as some of those commonly in use are well calculated to produce it.

"Amongst these," he adds, "the warm bath is one of the most active, and, at the same time, most injurious; and I cannot imagine how any one, who has once witnessed its effects, can again recommend it in croup. It is, in my opinion, so decidedly hurtful, by quickening the circulation, that I should interdict its use in almost all inflammatory cases. The warm bath, I think, is never useful unless prolonged until faintness is produced; and in the early stages of inflammatory complaints, it is often impossible to produce this effect, until the heart beats more than 130 times in a minute, which is a degree of excitement I think unwarrantable. If resorted to later, effusion is brought on sooner than it would otherwise supervene; and many practitioners could, I think, call to mind cases, where its use has been followed by unexpected death: the vessels previously emptied perhaps by bleeding, having given way, and apoplexy supervened."

Emetics are equally condemned by Mr. G. "The action of vomiting consists," says Mr. G. "not merely in ejecting the contents of the stomach, for respiration is suspended by it, whilst the heart continues to act, and by propelling blood to the lungs, the balance between these functions is so far destroyed, that the greatest muscular exertions become necessary to restore it. These struggles are more violent and injurious in proportion to the progress of the disease, so that when fully formed, emetics, I think, ought never to be exhibited."

Nauseating doses of tartar emetic, he also disapproves of. "There is great reason," he justly observes, "to dread the action of this medicine, which too often acts as a poison on children when in small doses, and it appears to me that the means of relief are very disproportioned to the violence of the disease; and, in the majority of cases, very inadequate to remove it.

"A further, and if possible, more formidable objection, is the length of time occupied in giving this treatment a due trial; and where three or four hours are allowed to pass away, exhibiting only small doses of nauseating medicines to cure croup, the practitioner becomes responsible to a degree which can only be estimated by the effects resulting from such a treatment."

Blisters, applied upon or in the neighbourhood of the windpipe, in the early stages of croup, he considers as decidedly injurious. Here, also, several hours must elapse before the operation of the blister commences, much time is therefore lost which can never be redeemed; and when the blister does rise, the sense of stricture about the larynx is increased by it, the constitutional disturbance heightened, the pulse quickened, and the inflammation rendered more violent. A heated and close atmosphere is also injurious.

"From what has already been said, it is evident that two indications are necessary to be attended to, in the cure of croup; the first is to subdue the inflammation of the windpipe, the other to relieve the oppressed circulation. Without the first object be attained no means will avail; nor will it in every case be safe to wait until that can be accomplished, before we relieve the system at large. Danger may be imminent from either of these causes, and we have often to determine whence it is most so, and to regulate our practice accordingly.

"The causes which produce croup, its symptoms and progress, alike indicate the necessity of blood-letting, and this remedy, in comparison with which all others sink into insignificance, should be immediately resorted to. Any quantity of blood may be drawn by leeches, and the local complaint, in almost all cases, be subdued by them; for if one crop of leeches do not remove it others must follow, until the breathing becomes free, or the child so faint that further



depletion would be unsafe. This mode of taking blood, by emptying the vessels, which are inflamed will, it is evident, afford relief, with least expense to the constitution: but when the complaint has existed many hours, and the jugular vein becomes alternately distended and collapsed, during each inspiration; when the angles of the mouth are drawn downwards, every muscle of the neck brought into action, and the breathing consists of a series of gaspings, there will not be time afforded for leeches, and not a moment must be lost. The external jugular vein should be immediately opened with the lancet, though this operation is sometimes exceedingly difficult, requiring a quick eye and a prompt hand to catch it between each inspiration. The struggles of the patient, and the great contraction of the muscles, add to the difficulty; but no consideration should deter us from giving instant relief, and no other method of taking blood seems to afford the same immediate benefit both to the head and breathing. The child may be on the brink of effusion, and every minute lost is matter of serious reproach; but this urgency of the case, which if not attended to, will speedily be followed by stupor, and that loss of sensibility over the whole frame, so favourable to effusion, renders additional precaution necessary; for if the depletion be carried too far, or the vessels emptied very suddenly, that event so much to be dreaded will be accelerated.

"The finger should therefore be kept upon the pulse whilst the blood is flowing, and the further flow of blood prevented, if the breathing be properly relieved, before faintness is induced. It is safer to trust the further treatment of the case to leeches, which are indeed often necessary even when the jugular vein has been opened, and the loss of blood carried for the time to the greatest extent. This will not be matter of surprise, when we consider how little connexion there is between the arteries ramified upon the inner surface of the wind-pipe, and the external jugular vein. It is safest, therefore, to unload the general circulation, where that is requisite, from the system at large; and treat the local complaints with leeches where they can be easily obtained; but if not, the finger may be placed upon the orifice for a short time, when the breathing is relieved; and another and a smaller quantity of blood be taken from the same orifice, until faintness deter us from proceeding further.

"I have generally directed leeches to be put on the lower part of the wind-pipe, below the *pomum adami*, because they bleed quite as well as on the upper part of the tube. The blood is drawn from those vessels, which have most recently taken on the diseased action; the inflammation is thereby prevented from extending, and the vessels already weakened by disease, are emptied more gradually and with less danger of their giving way.

"In whatever manner the blood be taken, a degree of faintness must be produced, and kept up for some time, which renders the continuance of inflammation impossible, and the patient watched most narrowly, lest reaction come on, and more leeches be necessary. It is now that the ear of the practitioner will be most useful to him, and the sound of the cough, the noise which is made by the air passing through the inflamed part, and the frequency and freedom of the inspirations must be closely attended to. He should never leave the bedside of the patient until he is satisfied on every one of these points, since he cannot do so with safety, or consistently with that duty we all owe, where the life of a fellow creature is at issue. By and bye, he will be rewarded by hearing the cough alter its tone, it becomes loosened, there is a little expectoration, and the child is safe.

"It is difficult to convey to the mind of the reader, those shades of difference, which minute attention will soon teach him, and it is better perhaps to rest satisfied with directing his observation to those points in practice which are really important. But I wish to repeat, that a stridule will remain after the respiration has become free, and though neither this symptom, nor the high sounding cough, afford sufficient reason to apply more leeches, yet, the long continuance of either of them, is always an object of suspicion, and unless the inspirations be

free, full, and slow, he may rest assured that the inflammatory action is not entirely removed.

"I have hitherto considered croup a primary disease, but the majority, and the most severe cases are accompanied with, if not produced by, teething, which keeps up the irritation, produces relapse whenever reaction takes place, and is accompanied with determination to the head, and a disposition to inflammation and effusion there. The state of the gums ought always to be attended to, and they should be freely lanced, if there be heat or thickening over them in any part; and this precaution is often necessary, until the child has cut the first of its permanent teeth.

"During this time the bowels will have been opened by a dose of calomel and jalap, or of castor oil; and the only other medicine I am in the habit of giving, is calomel with opium in large and frequent doses. This combination, which before the loss of blood, would be highly pernicious, if given only when the head is freed from oppression, and the breathing is quieted, has always appeared productive of the best effects. It produces sleep, appeases the cough, creates determination to the skin, and prevents reaction; while the calomel acts here as in iritis, by preventing effusion and producing absorption.

"Another advantage arising from the combination of opium is, that it enables us to give a larger quantity of calomel, than would be otherwise practicable without its passing off by the bowels; and as the glandular system in children is seldom affected by it, and ptyalism therefore rarely induced, we need not be deterred from giving it largely, and have occasion only to watch its operation on the bowels."

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42. *White Agaric a cure for night sweats.*—In the *Journal der praktischen Heilkunde*, for March, 1830, M. BURDACH highly extols the powers of the white agaric (*boletus lurida*) in the night sweats of phthisical patients. A single dose of it given in the evening diminishes, he says, the sweats the following night, and if repeated several evenings arrests this debilitating symptom.

The agaric is given in the dose of four grains in the evening. If the patient is not irritable, from six to eight grains may be given, and the dose even repeated during the day. It is given in pills with a bitter extract. In cases of habitual diarrhœa, the author combines the agaric with kino or alum.

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43. *On Traumatic Tetanus.* By DR. SYM.—"Morbid anatomy is not the only source from which we may derive a knowledge of the seat of diseases; physiology often enables us to point out what organs are in fault, when certain functions are disturbed, because we know upon what organs the healthy performance of those functions depends. Now, the symptoms of traumatic tetanus confine themselves so exclusively to the muscles, that it appears to me difficult to avoid the theoretical conclusion, that local injuries of the motory organs produce the disease, by throwing into a state of morbid irritation the common origin of the nerves of the motory system. I say morbid irritation, because we are not warranted either by the symptoms of the disease, or dissection, to affirm that inflammation is present in every case, or in every stage of tetanus: the vascular excitement, of which traces are found in the vertebral canal, is more likely to have been the effect than the cause of that irritation which is communicated to the motory system of nerves, in the same manner as over-exertion of the mind causes increased action of the blood-vessels of the brain. I would not, however, rest the opinion I entertain, that the profession actually possesses sufficient grounds upon which to found a rational treatment of tetanus, merely upon principles deduced from the doctrines of physiology. Dr. Perry appears to me to have undervalued the facts observed by others, as well as by himself, respecting the morbid anatomy of the disease: for in his own two cases, in the valuable collection of cases published by Mr. Adams, in the 10th Number of this Journal, and in the two fatal cases contained in my collection in the preceding Number, the *post mortem* observations confirm the conclusion, that morbid



irritation of the spinal cord had existed during life. Dr. Perry has added an interesting appendix to this proposition, by showing a connexion between the morbid changes within the vertebral column, and similar changes in the condition of the nerves proceeding from the wound: and although, in his first case, he states, that the cutaneous nerves were those in which traces of inflammation were detected, I must remark, that the superficial peroneal nerve, which he particularizes, is principally expended upon the extensor muscles; and, as it lies between the muscular fascia and integuments of the lower and outer part of the leg, it must have been implicated in the sloughing and inflammation at the seat of the injury.

What, then, are the means by which we may arrest this morbid action of the nervous system of the muscles, or restrain it within safe bounds until it has wasted its force? I believe that when one portion of a system of organs, engaged in performing the same or similar functions, is irritated, the remaining portions partake of the irritation by sympathy; and that when the irritation of the former is soothed, the latter partake in the relief. I believe also, that when an undue determination of nervous excitement has been directed to one system of organs, other systems, performing dissimilar functions, sustain a diminution of nervous vigour; and that the excitement of the former may be allayed by irritating the latter. I fear we have few direct means of allaying irritation in the whole or any part of the muscular system, which are not liable to the objection of producing a still greater degree of torpidity in the secretory organs. Perhaps the warm bath, as a general remedy, and mild applications to the wound, or, if a slough exists, a fermenting poultice, to counteract, by its carbonic acid, the tendency which dead matter has to fall into putrid decomposition, comprise the most useful sedatives: opiates ought not to be employed to such an extent as to suspend the action of the other remedies. But in our choice of counter-irritants we have a much wider scope, and in severe cases we ought to take advantage of the full range. The skin, the mucous membrane lining the alimentary canal and urinary passages, and the salivary and biliary systems, furnish instruments which may be employed advantageously for the purpose of withdrawing from the muscular system a portion of nervous irritation. There are, however, certain states of the constitution, in which this transfer of irritation is more easily effected than in others. It is effected with less certainty when the system is in full vigour, than when reduced. In inflammation of the serous membranes, for instance, in plethoric subjects, if we apply a powerful blister to the skin before the force of the circulation has been broken by copious blood-letting, we are more apt to aggravate the inflammation than to relieve it; but the same remedy has most happy results, when applied after adequate depletion has deprived the constitution of the means of supporting two extensive foci of irritation at the same time. Unless, therefore, a tetanic patient is already in a proper state for counter-irritation, blood-letting ought to precede the use of local stimulants, and it ought to be repeated at short intervals until a decided reduction of vascular action has been obtained. Blisters and tartar-emetic ointment applied along the course of the spine extensively and unmercifully, (if I may use the expression,) so as to ensure a severe and long-continued irritation, stimulating embrocations, antimonials, and the frequent use of the warm bath; purgatives of such a nature as stimulate more the mucous than the muscular coat of the alimentary canal, in which view croton oil is less eligible than oil of turpentine or neutral salts; calomel, to excite the biliary and salivary secretions; irritation of the urinary passages by setons or bougies, or by cantharides applied to the denuded surface of the cutis, or by the internal use of oil of turpentine;—these constitute the means of counter-irritation, which have hitherto been employed with greatest success, and which, I trust, if employed consistently, energetically, and in combination with each other, will, ere long, deprive this frightful disease of more than half its terrors.

—*Glasgow Medical Journal*, May, 1831.



44. *Treatment of Gout.*—We copy from a recent No. of the *London Medical Gazette*, the following analysis of a paper read to the College of Physicians, by its learned president, Sir HENRY HALLFORD. Few if any living physician has had more experience in the treatment of gout than Sir Henry, and his opinions are entitled to the most respectful consideration.

“Sir Henry remarked that he felt as if some apology were necessary for directing the attention of those present to a complaint on which so much had been written as gout; but, said he, ‘I rest assured that you will receive in good part the result of my long experience in the treatment of that disease, and that if I state to you that there is no malady to which I am called upon to administer that I prescribe for with so much confidence in the resources of our art as for gout—formerly that opprobrium medicorum, you will give me willingly a few moments of your attention.’ On the various seats of gout he would not dwell. In fact, it was to be met with in almost every part of the human frame. Some believed they had seen it in the eye, and he had himself witnessed it in the kidneys, in the urethra, in the prostate gland, and in the tonsils. One of his colleagues had suffered from it in these, and he mentioned an eminent physician in the country so harassed by it, and so disappointed by finding no relief from the usual remedies for quinsy, that at length he plunged a lancet into it, in case any deep-rooted collection of matter had taken place. None followed, but the gout was dislodged, and in a few minutes made an attack upon the great toe. The angina disappeared, but the disease ran its usual course in its new situation.

“Among the various remedies for gout, Sir Henry’s dependance rests on colchicum. Under ordinary circumstances of gout in the extremities, he does not commence its use immediately, but postpones the antidote till the disease shall have become fixed: he then directs the wine of the root, prepared according to the formula of the pharmacopœia; and from this he expressly declared that he had not known ‘a single instance of any untoward effect.’ Frequently it removes the complaint without the manifest increase of any secretion: sometimes it causes perspiration, and sometimes acts as a diuretic; but so far is it from being apt to purge violently, as the *eau medicinale* was wont to do, that it is necessary in most cases to add a little sulphate of magnesia. The following is Sir Henry’s prescription:—A saline draught, with camphor mixture; a drachm of syrup of poppies; and not exceeding from thirty-five to forty-five minims of the *vinum colchici* at bed-time. In the morning the draught to be repeated, but with a little modification, viz. only twenty-five minims of the colchicum wine and half a drachm of the syrup of poppies, while to this is added a drachm of Epsom salt. This method is to be pursued for several successive days, and then followed up by a pill, composed of three grains of an acetic extract of colchicum\*, and one or two grains of Dover’s powder, with a like quantity of compound extract of colocynth, the whole being terminated by a mild purgative. ‘It had been argued,’ said Sir Henry, ‘that it had been laid to the charge of colchicum that its good effects were but temporary: now, even if it were so,’ he asked, ‘whether three or four attacks, of as many days each, were to be compared in the extent of suffering they produced, with the weight of a six weeks confinement, spring and autumn, which used to be the case before the virtues of colchicum were known.’ In addition to which, the evils resulting from the formation of chalk stones in the joints are now almost entirely done away—by the controul exercised by this medicine over the inflammatory stage of the disease. But, besides, Sir H. Hallford’s experience is against the correctness of the opinion that gout returns more frequently under the use of the colchicum: on the contrary, when the vinous infusion has been followed up by the acetous extract, he holds himself justified in asserting that the attacks are removed to as long intervals as they used to be when left entirely ‘to patience and flannel.’ The learned author of the paper did not, however, re-

\* Made by evaporating an infusion of the root in vinegar.

commend the above as a specific treatment to be adopted in all forms and varieties of gout, but as one of general application, requiring to be modified with varying circumstances. Occasionally some light preparation of bark is required in worn-out frames, to reinvigorate them after the colchicum: occasionally a blue pill is of service in restoring the flow of bile when it has become deficient. Of the different preparations of colchicum an infusion of the root in sherry, has appeared to Sir Henry to be decidedly the best: that made from the seed is apt to excite insupportable nausea, and when this has once happened, it is in vain that you urge a patient to try it again: he prefers the acute agony of the disease to the distressing misery of the remedy.

"The learned President proceeded to state that colchicum was not a new medicine, having been used in the sixth century, under the name of hermodactyle. Being desirous to ascertain whether this was identical with our colchicum, he had procured some from the market at Constantinople, specimens of which were laid on the table: they appeared to be the same as the common meadow saffron, and Sir Henry is about to make trial of them in gout, in the same manner as colchicum.

"In preventing the recurrence of the gouty attacks, by far the best remedy has appeared to be a few grains of rhubarb, with double its quantity of magnesia, every day; or some light bitter infusion, with a little tincture of rhubarb, and fifteen grains of the carbonate of potash, if the digestive powers were considerably impaired. Depletion, either by bleeding or strong purging, are to be avoided. But far more depends on the patient's management of himself than on any medicines, in keeping the malady at bay. He must live moderately, and dine earlier than the present fashion enjoins. Gentle, but regular exercise, and a mind free from anxiety, and not exhausted by deep study, are also among the precautionary measures; and in addition to these, the patient must be chaste. Pliny alludes to this, and uses a remarkable word in expressing it—*sanctitas*.

"In concluding his valuable and interesting remarks, the learned President stated that he had repeatedly seen the waters of Aix-la-Chapelle of much use in restoring the weakness of the knees and ankles, brought on by repeated attacks of other disease."

45. *Treatment of Chronic Dysentery by Sulphate of Copper.*—It may be recollected that some years since Dr. ELLIOTSON in a paper in the *Medico-Chirurgical Transactions*, recommended the sulphate of copper in the treatment of chronic dysentery. The following observations on this subject extracted from a clinical lecture given by him at St. Thomas's Hospital in March last will be read with interest.

"There was likewise presented a case of *chronic dysentery*, which exemplified the good effects of sulphate of copper united with opium. This man, like most of the patients that we take in here with chronic dysentery, I might say, perhaps, all, had been in a hot climate. He had several stools a day, and when he came in they were bloody. I began the sulphate of copper in doses of half a grain, three times a day, with half a grain of opium. These were gradually increased; but while I was employing them, there was no reason whatever for not having recourse to any antiphlogistic measures that might appear necessary. He complained of tenderness in the situation of the transverse arch of the colon; and, on that account, leeches were applied there from time to time. I think it impossible to say, as I have already mentioned, in chronic dysentery and chronic diarrhoea, whether there is ulceration or not; if, however, there be ulceration, that is no reason why a patient should not get well. Intestines are continually opened where cicatrices are seen, and sometimes very considerable ones too. You will find this mentioned by Dr. Latham, in his work on the Disease of the Penitentiary; you will find it mentioned by Andral. You will find that Mr. Howship mentions a case of cicatrization to a very great extent. I have frequently seen intestines in a state of ulceration at some parts, and of cicatrization at others, showing that ulcers had healed; therefore, whether there is chronic



inflammation merely in these cases, or whether there is ulceration in addition, there is no reason whatever for not persevering with our measures: the one case may be cured like the other. Chronic inflammation in the intestines will destroy life equally with ulceration. I have seen people sink under violent purgings, which have continued for some months, where there was not the slightest ulceration; and, again, I have seen persons who have lived for many months with their intestines ulcerated to a great extent. I never saw a greater mass of ulceration than in the intestines I showed you last Tuesday, and that man had unquestionably been in that state a great many months. The condition of the *feces* is exceedingly various; sometimes they are bloody, sometimes they are not bloody at all. The man, to whose case I have just alluded, never had a speck of blood in his *feces*; whereas, on the other hand, I have sometimes seen in mere inflammation a great quantity of blood. Then, with respect to pus, there never was the appearance of pus in that man's secretion: on the other hand, in diarrhoea, you will frequently observe pus, although there is no ulceration. In that man's large intestines, the whole mass of *feces* was of the healthiest description.

"The present case was useful as showing a fact which is seen continually, respecting doses of sulphate of copper; namely, that the difference of half a grain may make all the difference in the benefit. This man took at last two grains, three times a day, with a certain benefit: but, not mending so fast as could be wished, the dose was increased to half a grain more; the result of which was, that he immediately began to improve rapidly. I believe I have mentioned before that it should be given in a solid form, and not on an empty stomach; and that it is best combined with opium, at least in the first instance. I have frequently given it with two or three grains of opium, and at last have gradually diminished the opium till I left this off altogether. As, however, besides being an astringent, it is acrid, it is best to obviate the effect of the acrimony by opium. Of course, where it is given with opium, you cannot tell what are the effects of the sulphate of copper and what of the opium, because the opium itself has a strong tendency to check the diarrhoea. It is only from the comparison of a number of cases treated with opium and sulphate of copper, with cases where opium only was employed, and from cases where the opium has been greatly diminished and omitted, while the sulphate of copper was increased and continued, that the fact can be ascertained; and by comparing cases where opium was first given alone, and then the sulphate of copper added. It is only by these observations that its use can be proved. Of its good effects alone, I have no doubt; but knowing the advantage of opium, I consider it my duty to give a patient all the benefit that medicine will allow, and therefore I unite them together, provided the opium do not disagree.

"There is a case in the same ward at this moment, of chronic dysentery, which was very bad, but is now doing exceedingly well, and which also illustrates the benefit arising from the addition of half a grain only of the sulphate of copper. It has occurred in a young man who, I believe, has been at St. Helena. His stools continued bloody; when he came in, he had a great many in the day, and had been ill a year and a half; he had ten stools a day, sometimes twelve, sometimes fifteen. There was tenderness of the abdomen, and, therefore, to give astringents without attention to the inflammatory state, would have been wrong. Astringents for the diarrhoea were indicated, but still there was so much tenderness that I thought it right to apply leeches to the abdomen, and he had twenty applied from the 2d till the 15th, and then I began to give him half a grain of opium, and half a grain of sulphate of copper, which was gradually increased till I came to two grains each; under which he continued improving, but not so rapidly as I desired. On the addition, however, of half a grain, he instantly began to mend very considerably. The last report is, that he had only one motion in the course of the twenty-four hours, and that of an healthy appearance. His stools before were liquid, and more or less bloody, but now they are generally healthy, and rarely show any blood."—*Lond. Med. Gaz. June, 1831.*



46. *Treatment of Neuralgia by Moxa*.—Mr. COOPER, in a short communication in the *North of England Medical and Surgical Journal*, for November, 1830, strongly extols the utility of moxa in that form of neuralgia arising from idiopathic inflammation of the nerves, and he relates four cases of neuralgia of the sacro-ischiatic nerve successfully treated by this mean. The chronic form of this disease usually bids defiance to almost every plan of treatment. Cupping, leeches, blisters, turpentine, tartar emetic, warm baths, carbonate of iron, &c. afford in some instances none, and in others only a transient mitigation from torture. In these protracted and severe cases, Mr. Cooper says, "the moxa operates a surprising change; immediately on its application, it entirely subdues the pain of the nerve, which in some cases never returns, when the metastasis is complete; in others the relief becomes permanent by establishing and perpetuating a discharge after the separation of the eschar."

"Artificial moxa may be formed by immersing lint in a strong solution of the nitrate of potash, and after moulding it into a cone and allowing it to dry, it will be fit for use. The application is made by placing the base of the cone over the affected part, and retaining it in that position till the whole is incinerated."

"CASE I.—John Robinson, aged thirty-two, by trade a wool comber, applied to me in the spring, 1827, for neuralgia of the sacro-ischiatic nerve, under which he had laboured above six months, he was quite emaciated, from intensity of pain, loss of sleep and appetite. The remedies that were tried gave no relief till the moxa was applied, which immediately relieved the pain, and he was soon restored to his wonted health and vigour—he has had no relapse."

"CASE II.—September 9th, 1827.—J. Hinchliffe, aged fifty, has had severe pain along the whole course of the sacro-ischiatic nerve some months, which has greatly impaired his general health, no plan of treatment was of any avail till the moxa was applied behind the trochanter, when the relief to the parts contiguous was immediate; it required a repetition however before it became permanent in this part. The pain continued in the leg notwithstanding the application of moxa twice to the hip, this was also entirely removed by employing the same agent over the nerve."

"CASE III.—Elizabeth Thomas, aged forty-three, has had severe pain in the sacro-ischiatic since December, 1828. In February, 1830, I applied a moxa behind the trochanter, which gave immediate ease. The pain still continued in the leg, for which a moxa was applied below the knee and was followed with the same favourable result."

"CASE IV.—May, 1827.—John Dobson, forty-five years of age, complains of pain along the parietes of the chest, which he has felt for several years, and which has progressed in spite of all remedies. On examination of the spine, there was considerable tenderness of the superior dorsal vertebræ, to this part a moxa was applied with complete success."

"Cases in confirmation of the efficacy of moxa in neuralgia might be multiplied, but those briefly detailed will suffice to recommend it, as deserving of a more extensive trial. So uniform has been the success of its application in my hands, that it approaches almost as near to a specific, in that form of the disease under consideration, as bark is a specific in intermittent fever."

47. *Inhalation of Iodine and Chlorine in Consumption*.—We hope in our next number to be able to present a summary of the state of our knowledge in relation to the effects of iodine and chlorine, in the treatment of pulmonary consumption; in the mean time the following remarks by the distinguished physician of St. Thomas's Hospital, Dr. Elliotson, cannot fail to prove interesting. We extract them from a clinical lecture delivered in May last, and a report of which we find in the *Medical Gazette*.

"I have now used, says Dr. Elliotson, the inhalation of iodine in several cases, but I cannot say that in one it has yet effected a cure. I have used it in three cases, where there was decided excavation of the lungs, and in all three death

has taken place, I should think, much about the time it would otherwise have done. These were cases of excavation of the lungs; but whether it would cure the disease before excavation has taken place, I cannot, of course, pretend to say. I confess I have very great doubts on the subject; and when any person tells me that he has ascertained the existence of tubercles in the lungs, and found them disappear under the use of iodine or any other medicine, I must be well satisfied that that person is a *very excellent* auscultator, before I can give credit to his assertion. I do not think that many people are able to say in general with certainty that tubercles exist in a solid state, without excavation, and that, after a time, these tubercles disappear. I should very much doubt my observations of my own on such a matter, notwithstanding I have carefully attended to auscultation now for several years; because you cannot satisfactorily ascertain the existence of tubercles unless they are very numerous and aggregated so as to render one spot of the lungs solid. I have frequently found tubercles in the lungs after death, where no sign of them whatever was given during life. Where, however, they are aggregated, so as to form a mass, there, of course, on striking externally, you will find a dead sound, and there will be less respiration there than natural, or none at all. But persons ought to be exquisitely nice auscultators to be able to declare the existence of tubercles with certainty, unless the deposition is considerable. We know that in chronic bronchitis, large tubes may be blocked up for a time, so that no respiratory murmur can be heard at the spot, and that afterwards these tubes will become open, and respiration be heard. I have seen respiration of a whole lung thus absolutely suspended for a whole fortnight, without any bad symptoms, and then the respiratory murmur spontaneously return. When we reflect on this, and the extreme difficulty of detecting tubercles, if not thus aggregated, before excavation has taken place, we ought not to place easy faith in the accounts which are given of tubercles having existed in the lungs and been removed. I do not presume to assert that such things have not taken place, but I confess I would rather witness them myself than believe such observations on the statements of others, unless, indeed, they were the conviction of several persons, known to be excellent auscultators; not of one or two individuals. I should doubt my own observations alone; I would not assert that tubercles had existed, and been removed in a single case, unless several friends, on whom I could depend, confirmed my observations on the particular cases, excepting, of course, instances of tubercular *masses*; and that iodine will remove them I much doubt. I would not place any reliance upon the observations of any one who declared he could ascertain all by the naked ear that others could by the stethoscope; because this instrument affords infinitely greater nicety of observation. If the plug is removed, the sound of both the heart and respiration are greatly magnified; there are some places of the chest to which the ear cannot be applied, as, for instance, in the axilla; and the contact of the side of the head with the chest is so much greater than of the instrument, that adventitious rustling sound frequently obscures the observation; lastly, the stethoscope can be applied to each individual point of the chest successively, with extreme nicety and expedition. Of course, the naked ear will give great information. But the nicety of the stethoscope is altogether far greater.

I have, however, used iodine in other cases than these three, but what has been the result I do not know. Several cases I have not seen again, and others are still in progress; but I cannot say that in any of them there has been such an improvement as to make me entertain very sanguine hopes of ultimate success. At the same time it would be very wrong to discourage trials. Such attempts are in the highest degree laudable, and I have no great respect for those persons who think that the profession can never be improved, and are content with allowing their patients to die under the old-established jogtrot routine of means—well established as unsuccessful. We ought not to go on affording mere palliation when there is the slightest probability of doing real good, or of doing, in the slightest degree, more good than before, by any new means. I



think it shows a very narrow mind to set one's face against attempts at improvement. I therefore give credit to all gentlemen who suggest any thing new, and still more to those who make exertions to carry such things into effect; but certainly I have not found even such temporary benefit under iodine as would give me very sanguine hopes. When there has been no evidence of any thing more than membranous affection, good has accrued; and, in excavation, certainly some alleviation. But I have used chlorine with certainly very considerable alleviation. I am attending a lady at this moment, who could not bear the inhalation of iodine in the quantity of a drop of the saturated tincture to three-quarters of a pint of water; it produced irritation, and yet she is able to inhale, in the same quantity of water, twenty drops of the saturated solution of chlorine, and the effect has been such, that her cough is nearly gone, and her expectoration reduced in a very great degree. I cannot believe that she will get well; but the amelioration has been such as I never saw before under the use of narcotics, or any other means whatever. There is a patient in this hospital labouring under phthisis and other complaints, and very bad he is, who could not bear the iodine. He used the smallest quantity that can be employed, but it immediately produced uneasiness, whereas he bears chlorine very well. In him the expectoration and the cough have been so reduced, that he will hardly allow there is any thing the matter with him. He says I have given him a new inside. The expectoration still exists to a certain extent, but the mitigation has been such as I never saw before in phthisis, from any means whatever. I have seen several other cases, both in private and public, where there has been a great mitigation under the use of chlorine; but whether it possesses curative powers, I cannot, of course, at present say. The iodine I know very frequently irritates, and it is necessary to add the tincture of conium, or of opium, or prussic acid, or hyoseyamus, to the solution, in order to prevent its injurious effects, but I have not found this necessary with chlorine; and when narcotics have been inhaled with iodine, they may often have deserved the whole credit, for I know that alone they are extremely useful.

I beg to observe that these are very crude observations, as I have only been using these remedies for two months. As, however, I shall not give any more clinical lectures till next season after the present month, it is right that I should communicate these things to you, because it will be for your advantage to know that chlorine, at any rate, will produce such an amelioration as I have now mentioned, and that iodine really deserves a fair trial. It is a striking fact that persons who cannot bear iodine in any quantity whatever, can bear a full portion of chlorine: it is not in one case or two merely that I have observed this circumstance.

I think, as medical men, we have all been much to blame for neglecting the inhalation of various substances, though proposed and practiced thirty or forty years ago; because we make applications to the surface of the body when it is variously diseased, and to the alimentary canal, and by inhalation we can make application to the air-passages themselves, when they are diseased. Nothing is easier than to make people inhale different substances by means of warm water. Inhalation is a more difficult thing if you employ gases; it cannot be done unless you have a large receptacle, with the substances of the exact strength that can be borne; but by causing the patient to inhale through impregnated water, so that the air is impregnated by the substance you employ, you can in that way employ any quantity you think proper of various substances. You have simply to take a common bottle with a broad mouth, and put a bung in it, with two apertures, through which you introduce two glass tubes. One of the tubes should pass to the bottom of the fluid, to let down the air from the atmosphere, and the air then rises up the fluid to the surface, and ascends the other tube, which merely passes through the cork, not descending so low as the surface of the fluid, and is breathed from at the opposite extremity by the patient. It is the simplest thing in the world, and can be employed without any expense.



48. *Powdered Alum, a cure for the Tooth-Ache.*—Dr. Kuhn asserts that alum, finely powdered, not only relieves the tooth-ache, but that it also arrests the progress of caries in the tooth. One or two grains are to be inserted into the cavity of the tooth, and this is to be repeated when the pain returns. In a short time, the pain will cease to recur, and the chemical action which constitutes the caries will cease.—*Gazette Méd. de Paris*, June 5, 1831.

49. *Antidote to Chlorine, and to Sulphuretted Hydrogen Gas.*—It results from the experiments of M. Hünefeld, 1st. That when inconvenience is experienced by the inspiration of too great a quantity of chlorine gas, the best remedy is to inhale sulphuretted hydrogen gas, which speedily dissipates the serious symptoms. 2d. That in case of suffocation or asphyxia produced by sulphuretted hydrogen gas, the inhalation of the chlorine, in its turn, is the best remedy.—*Bulletin des Sc. Med. January*, 1831, from the *Archiv. für Medoz. Erfahrung*, Sep. Oct. 1829.

50. *Employment of Calamine to Prevent the Pits of Confluent Small-pox.*—Mr. GEORGE, in a communication in the *London Medical Gazette*, for April last, states that the pits caused by confluent small-pox may be prevented by covering the surface of the sores with prepared calamine. In a man, twenty-four years of age, who, about the tenth day of the disease, was much exhausted by the disease, and in whom the cuticle, from adhering to the bed-clothes, was abraded to the extent of six or seven inches on each hip, and to the same extent in each ham and on the back, Mr. G. covered the exposed surfaces with prepared calamine. In four days the cuticle was every where restored, and the patient recovered more rapidly than usual. There was afterwards not a single pit to be observed where the cuticle had been so extensively removed, and even the immediate surrounding pustules which were unavoidably covered with the powder, had not destroyed the cutis.

51. *On Opium in Inflammatory Diseases.*—Dr. ROW, in a paper in the *London Medical and Physical Journal*, for July last, strongly recommends the external application of Opium in inflammatory diseases. He employs it in the following form. R. Opii. ℥j.; Linim. Camph. c. ℥j. Digere per dies aliquot et effunde linimentum. Many cases of catarrh, he says, are cured by one or two applications of this liniment, as if by charm. We give one of his cases, that of a child nine months of age, affected with bronchitis. The breathing was difficult, the inspirations being short and frequent, accompanied with a wheezing noise; the face very pale, the lips having a purple tinge; skin exceedingly hot; hoarseness of the voice when the child cried; pulse rapid. The child had been ill for some days, but the mother, thinking that nothing ailed it except a common cold, did not become alarmed until this morning. Nothing had been prescribed before I saw it. Two grains of calomel were given, and the breast and back rubbed with rather more than a drachm of opiate liniment.

“The calomel was rejected from the stomach almost as soon as taken. After the application of the liniment, the child fell into a sound sleep: at two o’clock he awoke, and sucked greedily; and at our visit, a little after two, we found him in a profuse perspiration, the voice perfectly free from hoarseness, and the breathing comparatively easy. At four o’clock, the breathing had again become difficult, but, in degree, nothing equal to what it was in the morning: the calomel and liniment were repeated. At six o’clock, the child seemed calm and contented; the eyes were sprightly, and some colour had returned to the cheeks. A portion of liniment was left with the mother, with orders to apply it, should the breathing again become hurried.

“15th February.—About three o’clock this morning the liniment was applied, as the mother thought the state of the breathing required it. At our visit at ten A.M., we found that the bowels had been twice moved; the effect of the calomel. The child seemed quite well, and therefore nothing was prescribed.

At seven p. m. the child continued well. At the request of the mother, a portion of the liniment was left, to be applied if required.

16th. The liniment was not applied. Cured."

52. *Leucorrhœa*.—Dr. RAZZONI, in a memoir in the *Annali Universali di Med.* for February last, extols the powers of the *secale cornutum* in the cure of leucorrhœa. He relates eight cases of the disease relieved by that remedy.

53. *Dropsy curæa by Kahinga*.—Two cases of dropsy successfully treated by the root of kahinga are recorded in the *Transactions Medicales* for March last, by Dr. FRANÇOIS.

54. *Cure for the Tooth-ache*.—The learned editor of our esteemed cotemporary, the *London Medical and Surgical Journal*, Dr. RYAN, recommends the nitric acid as affording immediate relief in the tooth-ache, when arising from caries. He says that he has used it in numerous cases, and invariably with success. In some instances the disease does not return for days or weeks, and in others not for months. The best mode of employing it, according to Dr. R. "is by means of lint wrapped round a probe, and moistened with the acid, which is then to be slowly applied to the cavity of the tooth; care being taken not to touch the other teeth, the gums, or the cheeks. On withdrawing the probe, and inquiring how the patient feels, the usual reply is, 'the pain is entirely gone.' The mouth is next to be washed with tepid water. The acid should be gradually applied to the whole cavity of the tooth, or otherwise a second application will be required before complete relief will be obtained.

"This remedy may be used when the gum and cheek are inflamed, so as to preclude the possibility of extraction. In cases where the diseased fang remains, and when the caries faces the adjacent tooth, it obviates the necessity of extraction in all cases of hollow teeth, which all practitioners declare to be desirable, if possible; and it enables the dentist to perform the operation of 'stopping or filling teeth,' much sooner than he can otherwise accomplish. In a word, it will alleviate a vast deal of human suffering, and supersede a most painful operation. It is not a panacea for all the diseases of the teeth and gums, though a certain and efficacious remedy for the common cause of tooth-ache. It will be a valuable remedy for children, delicate persons, and pregnant women. It does not accelerate the decay of the tooth to which it is applied."

#### OPHTHALMOLOGY.

55. *On the Utility of Strychnia in certain forms of Amaurosis*. By Mr. MINNIXON, Assistant-Surgeon to the Birmingham Eye Infirmary.—It is readily admitted that the term amaurosis comprises a variety of pathological conditions, not only most diversified in their seat, but various in their state; for instance, an accumulation of fluid in the infundibulum, producing pressure upon the optic nerve; or an alteration of the ossific aperture through which the optic nerve passes; an atonic state of the retina, unattended with any organic alteration; or an increased fulness of its vessels from general plethora, have all been designated by the term amaurosis, whenever they have led to much diminution of the power of vision; yet nothing can be more different, either as regards the seat of the mischief, or the state of the parts affected, than these several morbid conditions. It is not, however, from an intention to demonstrate the necessity of adopting a more precise and definite term, for the designation of the disease in question, that I have alluded to, what appears to be a great defect in the name generally applied to these various conditions of morbid action or altered structure, but to point out the necessity of selecting that particular state of the system, or the retina, or other part of the nervous apparatus of the eye,



leading to partial or total blindness, for the employment of a remedy which, on two former occasions, I ventured to recommend to the notice of the profession. It will be readily conceded, that on this circumstance depends the probable success or otherwise of the local application of strychnia in amaurosis; and, as I am well aware, that its use is attended with annoyance to the patient, and trouble to the surgeon, and that on this account it is not likely to be had recourse to, unless under an impression of its great value; and as the first trial, if unattended with advantage, will in some instances lead to its discontinuance, I shall trespass for a short time upon your pages, in order to impress upon the serious attention of your readers, the description of amaurotic symptoms which have been present in those subjects, in whom I have most advantageously had recourse to its assistance.

During the last six months I have received from several medical friends, a request to take under my care persons suffering from amaurosis, for the express purpose of subjecting them to a trial of the local application of strychnia, but in nearly every case they have been very unsuitable subjects; and, in some instances, it would have been highly improper to have attempted its use. The last patient I saw was one of this description; he was an attorney's clerk, who had been accustomed to write for many hours by a strong gas-light; and he remarked, (which, by the bye, is a very general observation,) that he was compelled to increase the strength of the light until the flame was eventually of a very vivid description; the strength of light with which he could see extremely well, when he first commenced the burning of gas, afforded him, after a time, little more than an indistinct perception of surrounding objects, and he was consequently compelled to increase the power of the flame, as has been mentioned; in this way he continued sometimes writing three or four, at others, six or seven hours together, by the assistance of this immoderately augmented light; by this means an attack of subacute retinitis was induced, an attack neither so rapid in its progress, nor so obviously disorganizing in its effects as the acute retinitis, nor so tardy in its course as the chronic form of this disease. I did not see this patient until his vision was nearly destroyed, when an examination of the eye, and an investigation of the history of the case, assured me that it was quite unsuited to the advantageous employment of strychnia. Had the remedy been used in this case, it is quite obvious that the patient would have suffered the inconvenience of its application, without any chance of deriving the slightest benefit; and it is by no means improbable that it might have been discarded from the good opinion of the gentlemen who had only been induced to try its powers in consequence of the recommendation of others; nothing, however, would have been more unfair than to have concluded from such a description of experience, even presuming the strychnia had been tried, that it had no influence upon the disease designated by that indefinite term, amaurosis. In nearly every instance in which I have employed the strychnia, locally, for the purpose of restoring lost, or improved impaired vision, other modes of treatment had been previously adopted, and the patients had been under the care of those, who, from my knowledge of their skill and acquirements, would treat them in the most judicious manner according to the general rules of practice in similar cases, so that I have had the great satisfaction of proving most unequivocally the decided value of the remedy in question.

If a person be suffering from loss or diminution of the power of vision from an atonic state of the retina, or other part of the nervous apparatus of the eye, or of the system generally, the local use of strychnia, (applied in the following manner,) will be, in my opinion, the most likely means of removing the defect, more especially, if it be of recent occurrence. But it will, in many instances, be found necessary to institute a most rigid examination, before deciding upon the necessity or propriety of the treatment: for instance, the history of the patient must be closely investigated, and the eye subjected to the most attentive examination, and if the result of this inquiry and examination lead to the opinion that the defect does depend on the atonic condition of one, or all the parts



to which I have just alluded, he may, with safety, be subjected to the very tedious and somewhat painful plan of treatment it remains for me to explain; but it will be readily admitted, that if this examination be not conducted in the most careful manner, it will be impossible to discriminate, with any approach to certainty, the particular conditions of the retina, and other parts of the nervous apparatus of the eye, productive of amaurosis, which admit of alleviation or removal; nor can the trial of strychnia, without such a preliminary investigation, be viewed, as otherwise than a rash and criminal procedure; a procedure which is more likely to destroy the power of vision for ever, than to yield any prospect of relief. Having pointed out that condition of the retina, or other parts of the nervous apparatus of the eye, or of the system, (which I have termed atonic,) capable of being relieved by the local application of strychnia, it may be thought right to complete the treatment, it may be frequently necessary to combine with this local remedy; but as my object is merely to recommend the employment of the more important remedy; and as the various tonics and stimulants, which it may often be advisable to use at the same time can be readily adapted to the circumstances of individual cases; and as they form but a very secondary and subordinate part of the treatment, I shall not extend my observations, nor trespass upon your pages to attempt the supply of this trivial deficiency.

The following case not only illustrates the mode of using the strychnia, but explains the condition of retina producing amaurosis, which has appeared to me likely to be benefited by its use, unless, indeed, it be admitted, that a suspension of its action for a long period, induces some alteration of structure, not indicated by constitutional symptoms, nor evidenced by local changes, by which it is permanently unfitted to receive and obey the stimulus of light. A few years ago, I attended a Miss P. of this town, who had, many years since, been operated upon for cataract, by the late Mr. Saunders; she was about nine years old at the time of the operation, which was very well performed, if we may judge from the appearance of the eyes, which do not present any traces of inflammatory mischief, and are only to be distinguished from perfectly healthy organs by the large size of the pupil, a rotatory motion of the eyeball, and a small remnant of capsule at the side of the pupil, this girl is highly intelligent, and in a moderately good state of health, and, with the exception of the defects just mentioned, her eyes are perfectly natural and healthy in appearance, and yet she has never been able to distinguish the form, colour, or magnitude of surrounding objects, having merely a perception of light, and a capacity to distinguish its degrees, when varied from an extremely feeble to a very brilliant light; a power which she possessed, though to a less extent, prior to the performance of an operation. Considering the defect of vision to have arisen in consequence of permitting the retina to remain for so many years unimpressed by its natural stimulus, and that by exciting its sensibility, it might still be rendered obedient to the stimulus of light, I employed the strychnia in the following manner:—having placed a blister over each eyebrow, and afterwards cut away the raised cuticle, so as to expose an extensive surface, which would be likely to prevent the frequent necessity of re-blistering the part, I sprinkled the strychnia equally upon the whole of the surface, commencing with the sixth of a grain upon each, and gradually augmenting the quantity until I was enabled to use a grain upon each side, at which time she had occasionally a much increased perception of light, with frequent scintillations; but, unfortunately, the remedy began to affect the head, producing so much uneasiness and nervous disturbance that I did not judge it prudent to persevere in its use any longer, much less to increase the quantity, to that extent, which, in my opinion, was indispensable to success. In the course of the treatment, I was pleased to hear this patient complain of the sensation of scintillation, as, on former occasions, that symptom had been frequently followed by the most satisfactory result; and although in this instance I was unable to persevere as I could have wished, in consequence of the extreme head-ache and other symptoms, yet it is still hoped, that on

some future occasion, she may be enabled to bear the requisite treatment, without a recurrence of these untoward symptoms.

There is one other circumstance which was remarked in this case, and which appears to me worthy of recording; when the blistered surface had healed in its circumference, I was compelled to place nearly the whole of the strychnia upon a very small space, indeed, a great part of it was dusted upon, and immediately around the situation of the supra-orbitary nerve; and it was observed that the remedy acted with greater advantage, than when placed upon a larger extent of surface. It immediately occurred to me that the nervous connexion subsisting between this branch and the nervous supply of the iris, afforded a satisfactory explanation of the circumstance. Acting upon this impression, I repeated this mode of application upon a patient soon afterwards, and instead of applying a long narrow blister over the whole eye-brow, and partly upon the temple, as on former occasions, I directed the lower border of the blistering plaster to be placed, as nearly as possible in, and just above the situation of the supra-orbitary notch, desiring that it might not extend beyond the outer edge of the eye-brow, and, in this case also, the advantage of limiting the application of the remedy was equally evident. As, however, the quantity it may be necessary to use, in order to produce the desired effect, will in some patients be considerable, and, as we cannot calculate upon the absorption of a thick layer of powder, with the requisite degree of rapidity, it will often be advisable to scatter it more extensively; bearing in mind, of course, that only as much of the strychnia must be placed in the situation we have considered to be that in which it acts most efficiently, as can be absorbed within the time allotted for a second application.

If, in the case of Miss P. the use of strychnia had been commenced soon after the failure of the operation of solution had occurred, there would have been every prospect of the recovery of a much greater degree of vision than she at present enjoys; but, as the retina had remained in an unexcited state for so many years, it was not probable that any treatment would restore its power, and it was only after an explanation to this effect; after having explained the very little chance of success the application of the strychnia afforded, in consequence of the long duration of blindness, that I consented to adopt the treatment she was desirous of undergoing.

The following brief directions will include all that I have hitherto found necessary to insure the full action of this remedy: place a narrow blister over each eye-brow, which must not extend beyond a line drawn upwards from the external canthus: when it has risen sufficiently, cut away all the cuticle and apply, for half an hour, a piece of linen to absorb the serum, which is apt to be discharged in large quantities for a short time after the removal of a blister, then dust the remedy chiefly in the situation of the supra-orbitary nerve, but not so thickly as to prevent the entire absorption of the whole layer of the powder, at the time of the second dressing, which should be, as nearly as possible, twenty-four hours afterwards; twenty-four hours between each dressing is a proper and necessary interval; cover the blistered surface with a piece of linen very thinly spread with ung. cetacei, for, if much greasy matter be mixed with the powder, it is less easily and quickly absorbed; but, unless a little be applied, the linen adheres to the wound and occasions great pain in its removal. Increase the dose of strychnia very gradually until the state of vision is improved, or symptoms indicative of the injurious agency of the remedy occur. If there be much local pain excited by the application of the strychnia, dilute it with flour, or mix it with opium; and if that do not succeed, suspend its employment until the stomach and bowels be improved by a plan of treatment instituted expressly for their benefit, and then resume its use; if severe pain in the head, convulsive muscular twitchings, great general nervous excitement, or other symptoms, denoting the injurious agency of the strychnia upon the constitution supervene, and the condition of vision be not improved, it must be discontinued altogether; as it would appear probable that in such case it was



not likely to exert a favourable influence upon the disease, at the same time, that from some peculiarity of constitution, it was calculated to do important general mischief.

The case of Miss P. is one, amongst others, which have fallen under my notice, strongly illustrating the propriety of the recommendation of the late Mr. Saunders, with regard to the early performance of an operation for the removal of congenital cataract. As it is impossible to conceive a greater argument in support of the opinions of that amiable man and excellent surgeon, upon this subject, than the remarks of Dr. Farre on the success of his (Mr. Saunderson's) operations, performed upon children at various ages, I shall beg leave to make the following brief extract from them. The sensibility of the retina "in many of the cases cured at the ages of four years and under, could not be suppressed in children who had enjoyed vision from birth; but at eight years, and even earlier, the sense was evidently less active; at twelve it was still more dull; and from the age of fifteen and upwards, it was generally very imperfect, and sometimes the mere perception of light remained."

On account of this disposition of the retina to remain in a permanent condition of inaction, when unaccustomed for a long time to the influence of its natural stimulus, it has been recommended on high authority, to remove a cataract from one eye, when fully formed, when its fellow is perfectly healthy; apparently forgetting that the retina of an eye so circumstanced, is by no means in the same unexcited state as that nervous expansion in the eyes of a patient affected with congenital cataract. For, if one eye only be affected with cataract, (not congenital,) the other eye remaining perfectly healthy, the action of light upon the retina of the sound organ, will produce a sympathetic impression to a certain extent, upon the other, and thus preserve its susceptibility, though in a diminished degree; whereas, in the case of congenital cataract affecting both eyes, the retina has never been fully and perfectly impressed with the stimulus of light, and its susceptibility gradually diminished on the one hand, whilst its stimulus declines on the other; the declension of stimulus arising from the increasing density and opacity of the cataract, and the diminution of susceptibility being dependant on the inactive state of the retina, increased by the gradually diminishing quantity of light transmitted through the humours of the eye, from the cause to which we have just adverted.

It has been said that, if a mature cataract be allowed to remain in one eye, it disposes that organ to become amaurotic, and has a tendency to excite a similar disease in its fellow; and whilst it limits the sphere of vision, it weakens the opposite organ by the undivided labour it obliges it to sustain. As I have never had the slightest reason to believe that an opaque condition of one lens, possesses in itself any capability of exciting a similar state in the lens of the opposite eye, and as my attention has been particularly directed to the investigation and elucidation of this circumstance, I must refuse my assent to this doctrine, until future observation has increased our knowledge upon this point.

With regard to the other objections, I will merely observe, that whenever one eye only has been affected with cataract, which has not been congenital, nor produced by accident, the vision of that eye has been generally restored by an operation, however long the cataract may have existed; or, rather, the retina has, after such operation, indicated its capacity to be properly excited by its natural stimulus. Of course I am presuming that the operation has been judiciously adopted and properly performed, and that no effects injurious or destructive to vision, have been produced by the operation. If congenital cataracts had been permitted to exist for the same number of years, as in the cases now referred to (though not detailed,) from my notes, and which have furnished me with the data for my present opinions, the degree of success consequent on the performance of an operation for their removal, would have been much less considerable, and, in many instances, judging from the result of operations undertaken for the cure of congenital cataracts, upon patients at the age of ten and upwards, no vision whatever would have been restored.



From these remarks, and from opinions formed after the maturest deliberation, I would deduce the following conclusions; and 1st, that although the retina in the case of congenital cataract affecting both eyes, is likely to remain in a permanently atonic state, if the opaque lens be not removed at an early period of life, yet the same condition of retina is not likely to be produced by the existence of cataract in one eye, for an equal number of years. 2nd, that experience does not warrant a belief, that the existence of an opaque lens in one eye, has a tendency to excite a similar disease in the opposite organ. 3rd, that so long as the sight of one eye remains perfect, the field of vision is sufficiently extensive for every useful purpose; and lastly, that in many persons who have lost the power of vision with one eye, the sight of the remaining eye has continued with the same, or nearly the same, degree of vigour, as under ordinary circumstances.—*Midland Medical and Surgical Reporter, May and August, 1831.*

56. *On the efficacy of the Nitrate of Silver Ointment in leucoma, and dense opacity of the cornea.* By Mr. MIDDLEMORE.—Sometimes the cornea may be the seat of leucoma, which may or may not be combined with synechia anterior; and if this leucomatous state of the cornea be very extensive, or unusually dense, the power of vision will be very generally limited to an indistinct perception of light, and, in other instances, vision will be totally destroyed. In such cases, the iris will be frequently uninjured, and the deep-seated textures unimpaired, and the retina quite capable of performing its proper function, if the opaque condition of the cornea did not prevent the transmission of light. It is, therefore, a point of the utmost importance, to remove this opaque state of the cornea with as much speed as possible; but, in many of these cases, the oxymuriatic drops, and the various stimulants usually employed for this purpose, either fail to remove it altogether, or do so only partially, after the lapse of a very long period. In these instances, I have witnessed the most surprising results, from the application of the nitrate of silver ointment, used daily, or every other day, according to the effect it produces. Many persons, who had relinquished all hope of recovering any useful degree of vision, and who, according to the ordinary mode of treatment, would scarcely, under the most favourable circumstances, have discovered any increase of vision, after one or two years attendance, have been partially restored to sight in as many months; and in the space of five or six months, the leucoma has entirely disappeared, except at that point where the ulceration of the cornea, producing the leucoma, had extended through the whole, or nearly the whole, of its layers.

If this leucomatous condition of the cornea, or a state of simple opacity of the cornea, (always presuming that the corneal opacity be very extensive, and of considerable density,) be connected with an enlargement of vessels, which enlargement may be confined to its conjunctival covering, or may form the ostensible vascular organization of the substance constituting the opacity or leucoma, and may be therefore more deeply situated; the same mode of treatment is equally applicable, and will be equally successful. When either of these states of the cornea occurs as the result of purulent ophthalmia, the chances of success will be still greater, on account of the comparatively short period which has elapsed since the new substance, constituting the opacity, has been deposited and organized, and the greater activity of absorption at that early period of life.—*Midland Med. and Surg. Reporter, August, 1831.*

57. *Pannus.*—In our department of Materia Medica, we have given the formula for the preparation of nitrate of silver ointment; that ointment Mr. MIDDLEMORE recommends in various affections of the eyes, and among others, he states that it is calculated to render the most important service in that thickened, opaque, and vascular state of the conjunctival lining of the eye, usually termed pannus.

This condition of the mucous covering of the cornea, is frequently combined

with, and produced by, a vascular and granular, or, (what is more infrequent,) a cutaneous state of the palpebral conjunctiva; but, whether this condition of the palpebral conjunctiva be present or otherwise, whether the mucous covering of the cornea be merely thickened and rendered opaque, or, in addition to this thickened and opaque state be also vascular, Mr. M. says that the use of the nitrate of silver ointment is equally called for, and promises the most speedy and material relief. Of course it would be desirable to cure any defect requiring operation for its removal, which appeared to be maintaining and increasing this morbid condition of the cornea, before having recourse to the ointment; for instance, there may be an incurvation of the tarsal cartilage, an irregularity in the growth of one or more of the eye-lashes, or an inversion of the whole of the eye-lashes, from their unnatural position at the inner border of the tarsal margin, which having produced the alteration in the translucency of the cornea, to which I am now adverting, it would be advisable, indeed, indispensably requisite, to remove, as a preliminary measure to the adoption of any curative plan of treatment whatever. But the mere removal of this defective condition of the tarsal cartilage, the integuments of the eye-lids, or the direction of the eye-lashes, will not be sufficient to restore the translucency of the cornea; and it is with a view of curing the effects any one of these conditions may have produced, and which the mere removal of the cause which produced them, will not accomplish, that the present plan of treatment is proposed.—*Ibid.*

58. *Chloruret of Lime in Purulent Ophthalmia.*—We have already noticed, Vol. I. p. 459, the chloride of lime having been successfully employed by Dr. Varlez of Brussels, and Mr. Guthrie of London, in the treatment of purulent ophthalmia. In a late number of the *Journ. Comp. des Sc. Med.* Dr. HENZSBERG relates four cases, in which he employed this remedy with advantage.

We have ourselves employed it in a few cases, but without the striking benefits we were led to expect from the representations of others. It will require further experience to determine its real value.

#### SURGERY.

59. *Excision of Scirrhus Rectum.*—Mr. LISFRANC has excised the lower extremity of the rectum in nine cases, of which six were successful, for the removal of what is termed by French surgeons, cancer. The peritoneum descends along the front of the rectum to six inches from its extremity in women, to four inches from the same in man. By means of an ovoid incision in the skin around the anus, the rectum can readily be drawn out behind, and any kind of instrument may be applied to it; there exists a second sphincter above the first. M. Lisfranc has removed as much as three inches and a half of the rectum, and he recommends the operation whenever the forefinger can reach beyond the upper margin of the disease, and when the cellular texture, external to the gut is sound. The operator must bear in mind that the antero-posterior diameter of the perinæum is generally one inch, the distance of the anus from the coccyx eighteen lines, and that between the anus and the base of the same bone two inches, that considerable portions of the rectum may be removed laterally and posteriorly without wounding the vagina in woman, or the urethra in man; and finally, that hæmorrhage may always be arrested by pressure or by ligatures. In the performance of the operation the patient is to be placed as in the lateral operation for lithotomy—two semilunar incisions are to be made around the anus—and the rectum to be insulated in its inferior extremity, drawn down by the forefinger introduced into its cavity, and cut off by means of scissors. After the cure, the feces are sometimes voided in the usual manner, sometimes a *bourette* is formed internally, and takes the place of the sphincter, sometimes



there is incontinence of liquid *feces*, and sometimes the patient is obliged to stuff the rectum with lint.—*Med. Chirurg. Review*, July, 1831.

60. *Extirpation of Cancer of the Rectum*.—M. MAURIN also has performed this operation successfully on a patient, at the Hospital of Versailles. The patient was a man thirty-one years of age, of delicate constitution, who presented himself to M. Maurin in the beginning of September, 1828, complaining that he could not procure a stool, except by the aid of enemata; and that he felt great weight and acute pains in the rectum. On examination by the finger, a hard and irregular tumour was discovered, about two inches from the anus, ulcerated in the centre, and discharging a sanious ichor, of a most intolerable fœtor. The mobility of the tumour, notwithstanding its distance from the orifice of the gut, induced the surgeon to entertain the idea of extirpation. Baron Dupuytren was consulted on the 17th of September, and made the following note: "There exists about two inches from the orifice of the rectum a carcinomatous tumour, occupying one side of the gut, to the extent of about two inches. There is no chance of a cure, except by an operation—and this operation must be both difficult and dangerous. If the patient shall make up his mind to the risk of the operation, I am ready to attempt it." *Sept. 21st*. Encouraged by this opinion of so celebrated a surgeon, M. Maurin himself determined to operate. For this purpose he made an incision through the posterior and left part of the sphincter, by means of a probe-pointed bistoury, when the tumour was seized by a kind of tenaculum, and drawn downwards gradually and gently, till it appeared in view, when it was carefully removed by means of scissors. When taken out, it was found to be of an oval form, a little flattened, and two inches in length, with an ulceration on one side. It was of a very compact tissue. The operation was very painful, and considerable hæmorrhage attended, but was soon arrested by stuffing the rectum. In the course of five hours after the operation the patient experienced acute pains in the epigastrium, with dysury, sharp fever, and intense thirst. Two bleedings relieved these symptoms, and he slept some in the course of the night. In the morning the pulse was reduced from 140 to 100, and the patient was again bled. When the dressings were removed, there issued a considerable quantity of pus with blood. In the course of the succeeding days the state of the patient was improved—the purulent discharge lessened—the lancinating pains ceased, and, by the 15th of November, the discharge was almost nothing. Consistent and spontaneous stools were passed. On the 1st of December the wound in the sphincter was found to be cicatrized. On the 8th of the same month, the patient was discharged from the hospital cured. He experienced no difficulty or pain in passing his motions.—*Ibid*, *Revue Medicale*, Feb. 1831.

61. *Excision of Ulcer of the Rectum*.—This operation has been performed by Mr. Mayo, at the Middlesex Hospital. The patient was a female, thirty-eight years of age, who, for two years previously had experienced pain in the rectum, when the bowels were evacuated. This increased in severity, and was attended by unpleasant sensations about the loins, &c. and some sanguineous discharge. In December, 1830, she entered the Middlesex, labouring under severe pains in the rectum, with the occasional issue of pus and blood.

On examination of the rectum, it was found to be indurated and ulcerated to the extent of two inches, but the finger could be passed beyond the diseased part into a healthy gut. Various remedies were tried, but in vain. Mr. Mayo then determined on an operation.

"The operation was performed on the 25th of February, in the following manner:—the patient was laid upon her side, with the hips and knees bent. The fingers being then introduced into the rectum, the knife was plunged into the perinæum, on one side of the bowel, and, an incision of some depth being thus made laterally, the dissection was continued forwards from thence, so as to separate the vagina from the rectum. The dissection was then continued



entirely round the rectum, including half an inch of integument, with the sphincter muscle. By this means, a length of two inches and a half of the extremity of the rectum was separated from the adjacent parts: it was then cut off with scissors from the sound rectum above. The operation was performed slowly, and the vessels, about nine in number, were tied as they were divided. The patient lost about twelve or fourteen ounces of blood."

In about two hours after the operation, and when the smarting of the wound had subsided, she observed that she found herself entirely relieved from the pain and distress to which she had been subject for so many months. The appearance of the wound is singular. The extremity of the bowel is not more than half an inch from the cut edge of the skin, and the intervening granulations are healthy and rapidly cicatrizing. The bowels act regularly once a day; and the patient is aware of the presence of the feces in the rectum. In about five minutes after this sensation is perceived, the bowels act much in the usual manner, though it is evident that there can be nothing at present equivalent to a sphincter muscle. A hope is entertained that when the wound is cicatrized and contracted, the patient will have some power of retaining solid feces. —*Lond. Med. and Phys. Journal*, April, 1831.

It is stated in a subsequent No. of the Journal, (that for June) from which we take the report of this case, that the general health of the woman was improved, and the sufferings she experienced from the disease entirely removed by the operation. She can even *perfectly retain* her feces. As might be expected, however, when she is under the influence of purgative medicine, the contents of the bowels are discharged rather quickly; but it seems far from impossible that, in time the firm cicatrix at the wound, assisted by the action of the muscular fibres of the bowel itself, will form a sufficient substitute, on all occasions, for the sphincter muscle, which has been removed.

62. *Amputation of the Thigh at the Hip-Joint.*—In the *Glasgow Medical Journal* for August last, a case of this, terminating successfully, is related by Dr. CHARLES BARRER. The subject of the case was a Greek soldier, twenty-three years of age, who was wounded by a six pound ball, at the battle of Athens, on the 6th of May, 1827. The ball struck the posterior and lateral part of the left thigh, immediately below the trochanter. The integuments and muscles of the hip and thigh were very extensively torn and removed. The trochanter, neck and four inches of femur were broken into minute pieces, but the femoral vessels were untouched, and the mass of flesh on the inside, formed by the adductors, vastus internus, and gracilis, was uninjured. The person complained much of pain, from the distortion of limb, but suffered little from weakness or depression. The bleeding from the wound was inconsiderable. Some wine being given him, and the leg disposed as favourably as circumstances would permit, he was conveyed on board an hospital ship. Upon examining the limb, in reference to an operation, the gentlemen assisting coincided in opinion, that amputation was authorized under the most favourable circumstances, and that, in our actual state of disturbance and movements, any delay of operation was quite inadmissible. The plan of proceeding was readily determined on, and executed without difficulty, in the following manner:—Firm pressure being made by the cross-piece of the screw of a tourniquet and a pad on the external iliac, immediately above Poupart's ligament, a convex incision was made across the highest part of the thigh and hip, passing from the inside of the sulcus of the blood-vessels, to an inch and a half behind the trochanter, including in this convexity and extent the torn superior circumference of the wound, and exposing the capsular ligament of the joint.

The femoral artery was now secured above the branching off of the circumflex and profunda. The capsule and round ligament were next divided, the acetabulum exposed, and the head of bone drawn out. The amputating knife was again taken, and, observing the particular shape of the upper incision, a corresponding flap was formed, by a double stroke of the knife, from the inner

and under part of the thigh, in which the fractured portions of the bone, and the contused and lacerated soft parts were included. The arteries were now secured, and the wound cleared of blood. Notwithstanding frequent ablutions of the wound with cold water, there existed a troublesome oozing of blood, without our being able to detect its sources, by which, and the fatigue of the operation, the patient became exhausted. Wine and assuring language restored him somewhat. It was evidently dangerous to dress the wound immediately; and leaving, therefore, its surface uncovered, exposed to the air, (a method frequently had recourse to in other similar cases,) we proceeded to another amputation. By this management the wound became so dry, after a few minutes, as to allow the operation to be satisfactorily finished. The flap covered very well the face of the wound, and was easily retained in proper contact by strips of adhesive plaster. The common dressings were applied, and a double-headed roller was carefully adapted to the peculiar form of the hip. An anodyne was exhibited, and six hours after the operation he was composed, and had slept; no pain nor bleeding from the wound.

The irregular movements of the army and navy, in consequence of the melancholy event of this battle, forced Dr. B's attendance elsewhere, and prevented him seeing the patient before the fourth day of the operation, when he found him conveyed to Poros, truly well, considering the many privations and hardships the poor fellow had undergone during the preceding days. The edges of the wound, though irritated, showed no disposition to separate, nor was the flap tense or swollen. The general system suffered from febrile feelings, anxiety, and restlessness, but the disturbance was not greater than the irregular and neglected state of his bowels, and the irritation in the stump could account for. Upon the whole, Dr. B. was agreeably disappointed in his expectations of his condition; and entertained sanguine hopes of his recovery, more especially that some arrangement had been made to ensure professional attendance on the wounded. During two days Dr. B. was at Poros, the patient recovered from every untoward symptom, and the wound was dressed and looked well. When Dr. B. returned to this place, after six weeks, he was delighted to see his patient completely cured and healthy.

63. *Lithotrity*.—M. SEGALAS has communicated to the Royal Academy of Medicine, the case of a man, forty-five years of age, who, for the relief of dyspepsia, caused by mental and physical fatigue, was restricted to a vegetable diet, consisting in great part of sorrel. Two paroxysms of violent nephritic colic soon supervened, and frequent hematuria. A urinary calculus was detected by the lithonriptor, and it was removed at a single operation. Chemical examination showed it to consist of oxalate of lime. M. Segalas offers two remarks in relation to this case: 1st, that the calculus, which could not be detected in two examinations with the sound, was afterwards detected with the lithonriptor; 2d, that lithotrity has here cured a patient in a single sitting, who was too nervous to submit to lithotomy.—*Archives Générales, May, 1831.*

64. *Lacerated wound of the Perinæum, with fracture of the bones of the Pelvis—Recovery*.—The following case related by GEORGE C. RANKIN, Esq. in a recent number of the *London Medical Gazette*, affords an interesting example of the powers of nature. A farmer of Upper Canada was crossing a narrow dam, "when meeting a loaded cart he unfortunately locked his wheel, and in backing to extricate himself lost his balance and fell out of the cart over the dam; the horse continuing to back went over also, with the cart, and was killed on the spot. The dam was about 30 feet high, and the cart fell over the man. The first sight showed a part of the sphincter ani, the whole perinæum and scrotum, torn away, in the form of a triangle, the apex of which was at the anus, and lying over the penis on the abdomen, leaving the testes perfectly denuded, and suspended like two eggs. Now, under such circumstances, they escaped entire destruction, I cannot conceive. On a nearer inspection, I found the subja-



cent soft parts in a dreadful state of laceration, a part of the ramus of the ischium gone, and the ischium itself fractured between its tuberosity and the acetabulum; the left crus of the penis and urethra divided; and, on passing my fingers under the testes, removed several portions of the os pubis, which were apparently chipped off as if by some sharp instrument, and which, as well as a large portion of the ramus, I have preserved. In addition to the above, the right arm was so completely shattered, that I was under the necessity of amputating it some days after, not with any hope of ultimate recovery, but merely to relieve the patient from the pain which the splintered bones occasioned.

"Looking upon this as a desperate case, I merely replaced the parts *in situ*, ordered poultices to be constantly applied, and the patient to be kept as quiet as possible. In this state he continued, labouring under the greatest excitement, until the 26th, about the tenth day after the accident, when I perceived that the injured soft parts had entirely sloughed off, the stump still continuing a good deal swollen. On the 28th, that state of collapse consequent on too great excitement, and which I had looked forward to as the event which was to put an end to his sufferings, was strikingly depicted on his cadaverous countenance; the stump was flaccid, and the wounds put on a languid appearance. I ordered wine to be given freely, and had the unexpected pleasure of seeing him something better on the 30th, and complaining of the pain occasioned by the pointed bones. Removed such parts of the ramus as I could get at with the bone-nippers, and succeeded in extracting two or three small splinters of the pubes, which had caused much irritation. From this time he appeared evidently to improve; the stump, as well as the wound, soon began to show a secretion of healthy pus. At the end of a month from the amputation the stump was quite healed, and in another fortnight the injured bones of the pelvis had completely exfoliated, and healthy granulations were fast filling up the frightful void which had been made in the soft parts; and in the beginning of March (1830,) instead of my visiting him as formerly, he came to me as long as the snow lasted, in a sledge; his long confinement in the recumbent posture, having afforded ample time for the tuberosity of the ischium to reunite to the body of the bone, so that he could very soon sit up without much inconvenience.

"The only thing further to be done for him was to endeavour to reëstablish the natural passage for the urine, instead of allowing it to continue to pass by the perinæum. This I attempted, and though unsuccessful, am still perfectly convinced of its practicability. After introducing the catheter, and irritating the edges of the wound, adhesive plaster was applied, and I feel confident would, in forty-eight hours, have secured a union by the first intention, had it been allowed to remain; but, to my great disappointment, I found next day that the catheter had been removed by some efficacious friend, and I could not prevail on him again to permit its introduction. I would not be surprised, however, to hear that nature had ere this done for him what he would not permit to be done by art; for when I last saw him, in August, 1830, he informed me that when he opposed any obstacle, as the end of his finger, to the passage of the water by the perinæum, it readily passed through the urethra.

"During the whole course of this case, the only prescriptions used were pectoral mixtures, to relieve a very troublesome and irritating cough, and an occasional aperient; and after the discontinuance of the poultices, the cerat. calamin. with lotions of sulph. zin. and an occasional touch of nit. argent, to keep down luxuriant granulations, were the only local applications found necessary.

"Of all the cases which fall into the hands of the practitioner in surgery for treatment, there are perhaps none from which he may obtain more credit to himself, in great measure at the expense of nature, than in extensive lacerated wounds; the alarm which any loss of substance invariably excites amongst the ignorant in surgery naturally inclining the patient to bestow all the credit upon his attendant, which the surgeon himself is content, in his own mind, to divide with nature.



"I am not aware of there being any case on record, accompanied with so many discouraging circumstances as the above, in which the patient has recovered; and the only object in view in preserving it, (as such cases are fortunately of rare occurrence,) is to afford another proof of the almost entire dependence to be placed, under such circumstances, in the *vis medicatrix nature*."

65. *Traumatic Tetanus*.—The following cases of tetanus reported in the *Glasgow Medical Journal* for February last, by ROBERT PERRY, M. D. senior surgeon to the Glasgow Royal Infirmary are interesting from some of the appearances noticed on dissection.

*Case I.* Patrick Vallily, ætat. 15. 17th April, 1830. A few hours ago, while sitting near the funnel of a steam-boat engine, the boiler exploded, and he was lifted into the air. Both legs and posterior part of left thigh are extensively vesicated, both arms and shoulders slightly so, occasioned by the hot water thrown on him. Pulse quick and feeble, has had no vomiting. Sumat. stat. tinct. opii. gtt. xl.

18th, Occasional vomiting; in other respects easy. Hab. opii. gr. i. vesp.

19th, Seems confused, but no return of vomiting; complains only of pains of abdomen, which is slightly tender on pressure. Tongue white and moist; pulse 100; bowels open. Cont. opii. gr. i. vesp. Adhibeant. abdomeni, hirud. xii.

20th, A rigor this morning; half an hour after was bled to 9 oz. Blood first cup buffy. Complains of slight pain of abdomen on motion, but there is no tenderness on pressure. Pulse 100; tongue white; thirst; bowels slow. Rep. infus. sennæ c. sulph. magnes.; Vesp. rep. venesection.

21st, Bled to six ounces. Pulse 120; tongue less white; bowels open. Feels much easier.

26th, Since last bleeding has continued much easier. Pulse has fallen in frequency, and tongue cleaning.

29th, Convalescent till 27th, when complained of pain in abdomen; not increased on pressure; had an opiate, which was repeated last night; to-day was found lying on his back, head retracted, and muscles of the head and trunk rigid; countenance anxious, and features retracted. Slight difficulty on deglutition, but can open his mouth pretty freely. Pulse 105; tongue whitish at edges, brownish and dry in centre. Sum. st. calom. ℥i. et post hor. tres infus. sennæ donec plen. deject. alv.; Post. sol. alvi hab. enem. c. tinct. opii. ℥i.; Spin. applic. vesicat.

30th, Physic operated well, and in the evening less permanent rigidity of the muscles, but the accumulation of phlegm in trachea most annoying. Spasms increase in frequency. Complains of pain in the region of the heart. Pulse 124; tongue brown and dry in centre. Sum. 3tia q. q. h. calom. gr. x. c. opii gr. iss.; Curet. pars vesicat. ungt. sabinæ.

May 1st, It was at this date the patient came under my care. Since last report the spasms of the muscles of the trunk have become more severe and permanent; less able to open his mouth, severe pain at epigastrium, no stool for the last 24 hours, has continued the calomel. To have powdered opium sprinkled on the vesicated portions of legs.

2d, Thirst urgent. Tongue dry; pulse 110. R. Ol. croton. gtt. iii. pulv. saec. gr. vi. M. et divid. in d. iii. Sum 1 3tia q. q. h. Applic. catap. com. vesicationibus. Omit. p. opii.

3d, Has had several dark stools from the croton oil; tension, and pain of abdomen, diminished, but spasms still continue. Pulse in the morning feeble, but become stronger since taking a little wine. 4 P. M. Pulse sunk considerably; in consequence of which, 4 oz. of spirit were ordered to be taken in divided doses with warm water and sugar. Spasms continued till 5 next morning, when he died. The body was immediately placed with the face to the floor.

*Inspection 24 hours after death.* The whole spinous processes and calvarium were removed, the brain and theæ vertebrarum fully exposed. There was a little serous fluid at the base of the brain, betwixt the tunica arachnoidea and

pia mater. The brain was considerably more vascular than usual, and on the posterior part of both lobes of the cerebellum there existed an ecchymosed appearance, which could easily be removed by raising the pia mater. The medulla spinalis had a perfectly healthy appearance, but a considerable quantity of partly fluid, partly coagulated blood, existed betwixt the theca and the vertebræ. The vesicated surfaces occupied the lower half of the left leg, and the outer and lower half of the right leg. Both had a green sloughy aspect, and the cellular substance was much inflamed. The veins did not appear more vascular than natural, and the arteries appeared healthy. The nerves were also carefully examined; the cutaneous of both legs, particularly the communis tibialis and the communicating branches of the peroneal nerve with the tibialis communis, were inflamed at the seat of the injury; tracing them upwards above this point they were perfectly healthy, except that portion of the peroneal which turns over the head of the fibula, there it was again distinctly very vascular, thus leaving an intermediate portion perfectly free from the appearances of inflammation. The vascularity appeared to be confined to the sheath of each nerve; the deep-seated branches appeared to be quite natural. No other morbid appearances were detected.

*Case II.* William Fleming, ætat. 17. 22d July, 1830. Eight days ago, the ring and middle fingers of the right hand were drawn in betwixt two treaded wheels, and the integuments much lacerated; the last phalanx of the middle finger was completely crushed, and separated from the second, except at its fore parts, where a small slip of skin kept it adherent; this was removed shortly after the accident, and the fingers dressed at first with adhesive straps, the day before admission had poultices applied. Last night began to experience severe pain in fingers, which, before yesterday, had been tolerably easy; at the same time, was seized with tetanic symptoms, of stiffness of the muscles of the neck and lower jaw, and pain at epigastrium.

On admission to-day, at 2 P. M. the symptoms above related, somewhat aggravated, but did not prevent him walking up to the hospital; there is at present slight rigidity of the sterno-mastoid muscles, deglutition easy. The second and last phalanges of the injured fingers are completely gangrenous, and the integuments separated from the first, exposing the bone, of a black colour. Has severe pain in bruised fingers, very much increased on the slightest pressure; pain does not stretch up arm. The bones of the second phalanx of both fingers are fractured; the fore and little fingers are uninjured. Bowels are easy. Had 12 grains of calomel immediately on admission, and 14 leeches applied to the nape of the neck, and at 6 P. M. both bruised fingers were removed. The middle finger was taken off at its junction with the metacarpal bone, and the two last phalanges of the ring finger. Torsion of the arteries was used in place of ligatures, to stop the hæmorrhage, (a practice I have always adopted in amputations of the fingers and toes) during the operation, of which he complained much; had distinct opisthotonos. The calomel not having operated, was ordered sulph. magnes.  $\mathfrak{z}$ ii. tart. ant.  $\frac{1}{4}$  gr., o. h.

23d, The salts and tartar emetic were continued every hour during the night. Bowels have been freely opened; vomited occasionally. Muscles of the back and belly have become rigid, and at times distinct opisthotonos occurs; is unable to open his jaws so far as to put out his tongue, the attempt to do so generally brings on general spasms. Complains much of pain of right breast. Pulse 140, full and soft; skin moist; slight head-ache; makes water freely; has some difficulty in swallowing. *Cont. tart. antimon. gr.  $\frac{1}{4}$  tantum. o. h. Omitt. sulph. magnes. Hab. acetat. morph. gr.  $\frac{1}{2}$  o. h.; Fricet. pect., c. tinct. opii. et sap., et colli nuch. app. vesicat.*

10 P. M. Spasms less frequent, but more severe; can open mouth better; has had no stool since visit at 1 P. M.; has taken regularly the quantity of morphia and tartar emetic prescribed; feels drowsy, and has vomited a little. Pulse 160, full, and rather hard; water has been drawn off by catheter. *Repet. sulph. magnes. et tart. antimon. ut antea.*



24th, Died this morning at 7, the spasms continuing both frequent and severe.

*Inspection, 24 hours after death.* The body was allowed to lie the usual way on the back till the time of inspection. The calvarium and spinous ridges were removed, fully exposing the theca vertebrarum, down to the cauda equina; there was no effusion on the brain or its membranes, and its substance was natural throughout. No effusion existed between the theca and the vertebræ; the theca was healthy, and betwixt it and the spinal cord was a preternatural quantity of serum. The cord itself was of a pale colour. The nerves on each side of the remaining phalanx of the ring finger were very vascular. On tracing upwards the ulnar nerve from this point to the elbow, it was of its natural colour, but here again it became very vascular for about the extent of 2 inches. In the axilla it again presented a similar appearance as at the elbow, the portion of it intervening betwixt these two points being healthy. Tracing the median nerve in the same way as the ulnar, it was found perfectly natural, from its digital branch, which supplied the radial side of the ring finger, (and which, as stated above, was much inflamed,) till about the middle of the arm, when it again presented an inflamed appearance for the extent of  $1\frac{1}{2}$  inch. The portion of it intervening betwixt this part and that confined to the axilla, where it again became vascular, was natural. This vascularity throughout, was not confined to the sheaths of the nerves, but occupied their substance; the radial and superficial nerves of the arm, along with its veins and arteries, were perfectly natural; the lumbar nerves were unaffected; the œsophagus was examined, and found healthy; the trachea appeared inflamed, and contained a large quantity of greenish coloured mucus; the other thoracic viscera and digestive organs natural.

The plan of treatment followed in the above cases may be considered as purely empirical, indeed, the treatment of this disease may be said to have been hitherto uniformly so, and must continue so while the seat and nature of the disease is unknown, as remarked by Mr. Cooper, in his excellent Surgical Dictionary,—“Nothing is a more certain proof of our not being acquainted with any very effectual method of treating a disease, than a multiplicity of remedies, which are as opposite as possible in their effects.” To give even a summary of the remedies employed, and the plans of treatment strongly recommended, would occupy too large a space, and be of little use, from all of them being founded upon conjecture. Although the morbid appearances in the two inspections related correspond very closely, it would perhaps be rash to found upon them (until confirmed by other cases) any certain plan of treatment; yet, I think I would be warranted in treating any case of the kind which might occur, as a local inflammation of the nerves leading from the seat of the injury, the interruption of the suppurative process in the wound being one of the first appearances. When the tetanic symptoms arise from fracture of any of the fingers or toes, or even compound or comminuted fracture of the larger extremities, we might be warranted in having recourse to amputation; at all events, a strict antiphlogistic treatment, with the application of numerous leeches in the course of the affected nerves, followed by blisters, ought not to be neglected; warm poultices, stimulating fomentations, or the turpentine liniment, ought to be applied to the wound, and these local remedies, accompanied with the free exhibition of emetic tartar, either combined with sulph. magnesix dissolved in water, or with calomel and opium in small but repeated doses, so as to act both on the skin and bowels—the torpid state of the latter in this disease, indicate an interruption or weakened state of the nervous system, which may arise from the increased expenditure or exhaustion of nervous power by the diseased parts.

66. *Wound of the Trachea—Occlusion of the Larynx—Aerial Fistula.*—M. RE-NAUD has recorded in a late number of the *Journal Hebdomadaire*, a case of this description. The subject of it was a man named Leblanc, twenty-five years of age, who was compelled to fly his home in consequence of a criminal offence, and seclude himself in another part of France. Three years afterwards, observing some gens-d’armes approaching him, and suspecting that



they were in pursuit of him, he resolved upon suicide. Seizing upon a bistoury, he always carried about him, he plunged it into that part of his throat corresponding with the space between the cricoid cartilage and trachea. The point of the instrument being directed upwards, it entered the larynx, and made its way out again, being directed from one side to the other. A profuse hæmorrhage ensued; and his answers to the *gens-d'armes* were not intelligible. They conveyed him to the nearest village, where he was unable to procure professional assistance for several hours. It was found necessary to introduce fluids into the stomach, for the purpose of alimentation, by means of a tube, and in twenty days the patient began to have some power of articulation. But in proportion as the external wound healed, the difficulty of breathing increased; and in six weeks after the accident, the unhappy Leblanc, fearing the officers of justice, contrived to make his escape to a distant part of the country, where he took refuge with his brother. Then the terrible difficulty of breathing suggested to Leblanc the idea of re-opening the original wound, in hopes of either putting an end to his life or his sufferings. With this intention he took an opportunity of pushing a knife through the cicatrix, and thus giving a free vent to the respiration. In this auto-operation, Leblanc made an opening into the pharynx, but of small extent. His brother arriving in an hour was terrified, and applied to the magistrate of the place, who procured a physician to examine into the state of the patient. He was conducted to the *Hôtel Dieu* of Rheims, where an attempt was made to re-unite the wound; but the difficulty of breathing which ensued, caused them to abandon the attempt. The event was left to nature, and in a fortnight the wound of the pharynx was healed. In proportion as the laryngeal wound healed, however, the dyspnœa increased, as on the former occasion; and to prevent suffocation, the patient himself constructed a tube of lead, two inches in length, and more than an inch in circumference, which he introduced, with some difficulty, but which gave him complete facility of breathing. He was obliged, of course, from time to time, to remove the tube, in order to clean it, and give issue to accumulated mucosities. In two months, he was completely well, with the exception of the inconvenience of the tube. And now the unhappy man was brought before a tribunal of justice, and was condemned to death. The severity of the sentence was, however, mitigated into perpetual labour. He was sent to work at a public construction in Toulon, where he arrived on the 11th of September, 1822. There he worked till the month of August, 1825, when the leaden tube slipped into the trachea, and became impacted at the origin of the right bronchus. There it excited constant and violent fits of coughing. He was sent to the hospital, and the instrument was extracted by a surgical operation, no details of which are given. During the patient's stay in the hospital, M. Renaud ascertained the complete occlusion of the larynx, by various experiments; and yet the patient was able to articulate many words with very considerable distinctness. Many of the most distinguished medical men of Toulon corroborated these facts. They all became convinced that the articulation of sounds in Leblanc's case, was made in despite of the entire occlusion of the larynx. This man could speak so distinctly, as to be heard and understood at some distance. There were certain words and letters, however, which he could not pronounce, as, for example, the letters a, c, l, and especially o. When he attempted to speak, he opened his mouth wide, depressed the larynx, and then, by a violent effort, expelled what air he could, as if by the act of coughing. Leblanc became the subject of repeated attacks of bronchitis, which ended in phthisis, of which he died on the 28th of July, 1828.

The dissection was made in the presence of the Council of Health, and various officers of the hospital. The complete occlusion was satisfactorily proved, the obliteration of the passage being where the trachea joins the larynx. The problem remains to be solved how Leblanc could speak, under such circumstances. Our readers may remember the case of Mr. Price, of Portsmouth, who still breathes through a tube in the trachea. In his case there is a small

aperture still for air, though not sufficient for respiration. His voice is almost extinct.—*Med. Chir. Rev. July, 1831.*

67. *Case of severe Scald treated by Nitrate of Silver.*—"The following case of severe scald, by an anonymous correspondent, demonstrates the utility of the nitrate of silver in this kind of affection, while it exemplifies its powers in changing and controlling the action of the capillary vessels.

"A little child, five years old, was pushed backwards by another child, whilst naked, into a large pan of scalding water which had been just taken off the fire. It was taken out as quick as possible, and yeast was applied upon the injured parts. It was visited one hour after the accident. The whole of the back as high as the shoulder-blades, and as low as the middle of the thighs, was found severely scalded, the cuticle removed from some parts, and in other parts raised into large vesications. The whole of the belly, the penis, scrotum, and thighs, were also in a similar state, but not so severely scalded as the back. An opiate was administered, and the yeast was removed with a sponge and warm water; it was well that no oily application had been used, as its removal would have required more trouble and have given more pain. The loose cuticle was removed with that of all the larger vesications, and the small ones were punctured, so that a clear surface was obtained, to which the nitrate of silver might be applied.

"The whole surface was then moistened with pure water, and a long stick of the nitrate of silver was applied flat, once over the whole surface, and a little on the surrounding healthy skin. A little linen just moistened was then past over every part to diffuse the nitrate of silver, so that no spot might be left untouched. The child cried much less than was expected when the nitrate of silver was applied on the denuded cutis. The back on which the child would have to lie was then covered with neutral ointment spread upon linen, secured by a bandage. The thighs and belly were left exposed to the air to form an adherent eschar, being defended by a fracture cradle.

"On visiting the child about eight hours afterwards, it was reported to have fallen asleep in a quarter of an hour after the application of the nitrate of silver, and to have complained of no pain since. There appeared no constitutional disturbance.

"The very first morning after the accident this little patient was turned on his side enjoying some playthings with several playfellows who were by the side of his bed. One part on the side of the thigh was much swollen and inflamed. It was discovered that the nitrate of silver had not been applied upon it. The whole of the belly and the other parts of the thighs exposed to the air looked very well, with scarcely any vesications; the eschars were removed in two places where the tapes of the bandage had crossed the belly; these parts were now defended by means of a small plaster of neutral ointment spread on linen. On some parts the eschars were floating on the serum, these afterwards became adherent. The scrotum and penis were much swollen, but gave no pain. The nitrate of silver was applied on the part not attended to at the first dressing.

"On the second day the child was going on well; some of the eschars were becoming adherent; the scrotum and penis continued much swollen, but there was scarcely any pain, and that on the belly. There was a slight heat of skin, and tongue was a little loaded. A purgative with senna and salts was given.

"On the third day nearly the whole of the eschars were found to be adherent, and the scrotum and penis less swelled.

"On the fourth day the eschars were quite adherent on the belly, and the penis and scrotum were of their natural size.

"On the fifth day the plasters of neutral ointment were removed from the back, which presented an appearance of a recently blistered surface, in a healing state, with some loose cuticle partially attached; there was no appearance of suppuration.



"In several days more the back was healed, except in two or three small parts, which were scalded more deeply than the rest, and were covered over with coagulable lymph, nor the least suppuration having taken place. The eschars were peeling off the belly, leaving the subjacent surface quite healed.

"On the tenth day this little patient was out of doors, and on the twelfth at school, every part being quite healed.

"Mr. Higginbottom, in his Essay on the use of the Nitrate of Silver, makes the following observations on burns and scalds:

" 'I have found that, by slightly passing the nitrate of silver once over a burnt surface, the pain is increased for a short time, but then totally subsides, vesication appearing to be prevented; the black cuticle peels off in a few days, leaving the part well. In cases in which the cuticle has been removed, the nitrate of silver applied on the surface induces an adherent eschar, and prevents the consequent ulceration.' p. 149.

" 'I have not had an opportunity of using the nitrate of silver in very extensive recent burns, but I can have no doubt of the benefit that would accrue from it. It should, I think, be applied over the whole surface of the burn or scald once only but as in external inflammation; then the parts most severely burnt should be covered with lint, and the whole of the burnt surface with the neutral ointment spread on linen, a bandage being applied to retain the dressings in their places. I should expect that the inflammation would be checked, and the consequent vesication, ulceration, and sloughing, in a great measure prevented, except in those places where the fire had actually destroyed the parts deeply. I should not examine the parts again before the fourth or fifth day; and if the dressing adhered I would let them remain during another similar period. The application of the nitrate of silver should be repeated in the same manner, as might appear to be required. I think the burn would then be limited in its extent, and would consequently be less dangerous; for the danger is generally in proportion to the extent of surface destroyed. The nitrate of silver has certainly the property of removing the irritability of the whole surface to which it is applied, and cannot add much to the pain of the burn itself.' p. 150.

"These anticipations appear to be correct when the nitrate of silver is applied to a burnt or scalded surface from which the cuticle is not removed. It has the immediate effect of subduing the heat or burning pain, preventing vesication, and causing it to terminate by resolution.

"When the skin is denuded of the cuticle and the nitrate of silver is applied, this most irritable and inflamed surface is converted into an insensible covering, which remains adherent until the inflammation is gone, and the new cuticle is formed underneath, at which period it loosens and drops off.

"The application of the nitrate of silver is equally efficacious whether the burned or scalded surface be afterwards exposed to the air or covered by the neutral ointment. In the first case an adherent eschar is formed in two or three days; and in the second the effects of the nitrate of silver appear to continue for four or five days, producing a constant flow of serum, which continues until all the inflammation, irritation, and pain, are gone. It is possibly of little consequence which plan is adopted, as both are healed about the same period. The adherent eschar would be preferable in parts exposed, as the face and neck; or the chest, belly, or legs too, if defended by a fracture cradle, and the patient in bed.

"The advantages of the nitrate of silver in the treatment of burns and scalds appear to be of the very first importance. We have at once a covering for the injured and very irritable surface superior to any other formed and composed partly of the very surface itself. The nitrate of silver acts as an *anti-inflammatory* agency both immediately and for several days after its application.

It may be safely applied over the head, chest, or abdomen, and it is not, like arsenic, and some other remedies used externally, liable to be absorbed into the system."—*Edinburgh Medical and Surgical Journal*, April, 1831.



68. *Treatment of Syphilis without Mercury.*—Dr. TRAILL, of Liverpool, in an interesting account of the general hospital at Hamburg in the *North of England Medical and Surgical Journal*, for June last, furnishes us with the following observations on the treatment of syphilis in Hamburg. “In so great a seaport, in so luxurious a city, it may readily be supposed that syphilis is not a rare disease; and from the constant influx of persons from every quarter of the globe, one might be led to conclude that the disorder, in its most disgusting forms, might be found in the hospital of Hamburg. In this, however, we should be mistaken. I had the satisfaction of accompanying Dr. Jacobson, of Copenhagen; Dr. Eckström, of Stockholm; and other eminent physicians, to the hospital, where Dr. Fricke had the kindness to submit to examination a great number of syphilitic cases, and to detail the history of each, as he pointed out the various stages of the complaint.

“The public prostitutes, on the first symptoms of this disease, are compelled to enter this hospital; and we had full leisure and opportunity to examine the various forms of the disorder to which they are liable.

“The mode of inspection is very minute, and is regularly practised, in all cases, by the medical officers, with a patience and manliness to which there is among us no parallel. Every change of symptoms perceived by Dr. Fricke is announced, and immediately entered in the case book by one of the assistant surgeons. Among thirty or forty females of that class, then minutely inspected, I did not discover a single instance of deep chancre with retorted edges. The chief symptoms were slight ulcerations, often little else than excoriations, *condylomata* or warty excrescences; and in incipient cases, specks of purulent matter filling the orifices of the mucous follicles or glands on the parts within the *labia*, and which were often so minute as to require a magnifier to render them apparent. In this insidious form of the disease, as Dr. Fricke remarked, the several symptoms of syphilis may be communicated by a female, without her being at all aware that she is diseased. Such instances he stated as having often fallen under his observation. He pointed out many examples of this affection of the mucous follicles within the *labia*; and, with a fine silver wire, demonstrated the existence of minute collections of matter in them, and, by slight inflammatory action, for a time closing their orifices. Among all the prostitutes here collected, I did not perceive a single case of ill-conditioned chancre, or of corroding ulceration; and even simple buboes were not very numerous.\* Of secondary syphilis, with the exception of a few cases of cutaneous eruptions, and ulcerated throats, chiefly among seamen, there were fewer traces than I ever saw among so many patients labouring under this disease. *Blenorrhæa impura* and *leucorrhæa* are very frequent, especially among the prostitutes.

“Every form of syphilis is treated in the Hamburg hospital WITHOUT MERCURY IN ANY FORM: and I have the authority of Dr. Fricke, and of all the other medical gentlemen of the establishment, for the important fact, that they never find the disease to require its use, and that this mode of treatment is not more liable than the mercurial one to be followed by what are considered as secondary symptoms.

“I did not find a single instance of any person disfigured by the disease; except one female, whose nose had fallen in *before* she was received in the house; and she had previously undergone a severe course of mercury in Berlin. Since her admission here, she has been treated on the anti-mercurial plan; and when I saw her, she appeared to be convalescent. This method of cure consists in frequent ablutions with tepid water, a very rigid low diet, almost amounting to starving, brisk purgatives and rest. Zinc and saturnine lotions are occasionally employed, but the circumstances above enumerated are the great means of cure. Even sarsaparilla is little used, and mercurials never. The success of this

\* The ill-conditioned chancre with rugged retorted edges might indeed be found among sailors received into the hospital; but the remarkable exemption of the public prostitutes from the severer forms of the disease is not a little worthy of attention.

practice is established by the experience acquired in the present hospital and its predecessor, at least as far back as fifteen years ago.

"Dr. Eckström, physician to the king of Sweden, informed me that the same treatment had been still longer pursued at Stockholm with equal success; and that the practice was adopted at Hamburg from the example of the Swedish hospital; which however borrowed it from the Royal Hospital at Copenhagen, where it had been established by the experience of a Danish physician, a pupil of our celebrated John Hunter.

"After the demonstrations were concluded, Dr. Fricke asked my opinion on the nature and treatment of the diseases he had shown. On remarking that few of the cases among the prostitutes appeared to have what we considered decided marks of virulent syphilis; and that many of them would be considered little more than excoriations, or the consequences of gonorrhœa; he justly remarked, 'Whatever opinion might be entertained on that subject, it was no less remarkable, if we refuse to give the name of syphilis to these diseases, that, among the class of persons most exposed to venereal infection, the public prostitutes, in one of the largest seaports of Europe, proverbially dissipated, true syphilis is unknown: for we had seen every variety of the disease which is usually met with in Hamburg.'

"He further added that the anti-mercurial mode of treatment had *never*, to his knowledge, been followed by diseased bones, unless where much mercury had been previously used; and the remark was confirmed by Dr. Eckström."

69. *Case of Spontaneous Varicose Aneurism.*—By JAMES SYME, Esq. F. R. C. S. L., and E.—Varicose aneurism, or a sac containing blood, and communicating with the trunks of both an artery and vein, is a rare occurrence; and the only instances which have hitherto been recorded either of it, or the analogous condition of aneurismal varix, where the blood passes at once from the trunk of an artery into that of a vein, originated from wounds. The femoral, popliteal, and subclavian vessels, and more frequently those at the bend of the arm, have been thus affected, in consequence of having their contiguous coats divided by some sharp-pointed weapon; but no instance has hitherto been observed of the opening taking place spontaneously, and I therefore think it right to relate the following case of varicose aneurism, which affected the aorta and vena cava, and occurred without any external violence.

Robert Scott, aged twenty-two, in the beginning of October, 1830, began to complain of pain in his back and limbs, throbbing in the epigastric region, and an incessant whizzing noise, which seemed to proceed from the same part. His sufferings became so severe in three or four weeks, that he found it necessary to confine himself to bed, and then came under the care of my friend Dr. Robertson, who soon afterwards requested me to see him. He complained greatly of pain in his back, and coldness of his feet; but what seemed to occasion both him and his friends most concern, was the constant noise that has been already mentioned. \* On examining the abdomen while he lay on his back, I readily felt the pulsation of a large tumour; but it was not so strong and incompressible as that of an ordinary aneurism, and in the erect posture might have readily escaped observation.

The treatment consisted in the use of all those means which tend to moderate the force of the circulation, but proved quite unavailing. The patient's sufferings became progressively aggravated, and a new symptom made its appearance, viz. œdema of the inferior extremities and generative organs. The swelling of these parts attained a degree that I never saw equalled, and occasioned an extraordinary contrast between them and his superior extremities, which were thin and emaciated. In the latter end of January the patient died rather suddenly, immediately after complaining of a pain at his heart.

After death, the œdema, which had previously been confined to the parts below the pubis, diffused itself over the whole of the body, so that when the dissection was commenced by the usual longitudinal incision of the integuments



of the trunk, they were found to be distended fully three inches, and a copious stream of serous fluid continued to issue from them, during nearly the whole of the subsequent examination.

In order to expose the disease completely, I removed the thoracic and abdominal viscera, and then traced the aorta from the commencement downwards. Having found an aneurismal tumour seated at the bifurcation of the artery, which adhered intimately to the vena cava and vertebræ, I dissected out the iliac vessels, cut them across some inches beyond their division, and then sawed away the bodies of the lumbar vertebræ, together with the promontory of the sacrum.

On examining more particularly the preparation thus detached, we observed that the tumour was of a flattened oval figure about the size of a large orange; that it adhered to, and had caused absorption to some depth of the bodies of the three lowest lumbar vertebræ, and that it was intimately connected with the vena cava, which appeared much flattened, distended, and thickened. It was now suggested that there might be a communication between the aneurism and vein, and on making a small opening into the sac, so as to evacuate its contents, we found this actually to be the case. Immediately above the bifurcation of the vena cava there was a round aperture somewhat larger than a sixpence, which afforded a free entrance into it from the aneurism.—*Ed. Med. and Surg. Journal, July, 1831.*

70. *Lithotrity.*—We have already announced, Vol. VII. p. 246, that the general administration of hospitals had given to M. Civiale the charge of a ward in the Hospital Necker, for the treatment of calculous patients by lithotrity, and we have also given an abstract of the report of M. Civiale of the cases treated by him during the first year. This memoir was referred by the Academy of Sciences to a committee, and on the 26th of April last, M. Larrey, on behalf of that committee, reported, that without suspecting the accuracy of the statements made by M. Civiale, he thought it his duty to apply to the council of administration of hospitals to ascertain the number of patients sent to M. Civiale's ward, and the result of the treatment, and M. L. says that M. Civiale is mistaken as to the number of patients received into his ward. This number M. L. states to have been twenty-six, instead of sixteen as reported by M. C. M. Larrey further states that twenty-four of these patients were operated on, and that eleven have died. Several of these had undergone lithotrity. M. L. blames M. C. for presenting to the academy only the more prominent points in his practice, and he states that the number of patients who have died after submitting to lithotrity, is proportionally as great as those who die from the operation of lithotomy in the other hospitals of the capital. M. Larrey terminates his report with some compliments to M. Civiale for the zeal which he continues to display in the improvement of lithotrity, and he calls the attention of practitioners to the comparative results of lithotrity and lithotomy.

At the next meeting of the Academy, a letter was read from M. Civiale, in which this surgeon charges M. Larrey with having made several mistakes in his report. M. C. states, that he had received during the period stated in his report, but nineteen patients, of whom fourteen only had calculi; to this number two must be added, included in M. C.'s report, and who were operated upon in private practice. Four of the patients received had no calculus; four of those who had a calculus were not operated on; two who had submitted to the preliminary trials could not support the treatment. Thus the number operated on was eleven, and not twenty-four, as said by M. Larrey. The error of the latter arose, according to M. C., 1st, from his having included in the period of his report four months more than was included in that of M. Civiale; 2d, from his having considered all the patients as calculous; 3d, from his supposing all the calculous patients to have been operated on. M. Civiale avers that several patients whose deaths are attributed by M. Larrey to lithotrity,



have never been operated on: others whose condition is said to have been exasperated by attempts at the operation have never been subjected to these trials; and finally, that a patient said to have died in consequence of cystotomy, did not undergo this operation.

In answer to this, M. Larrey referred to the documents joined to his report, and which were deposited with the secretary of the Academy.

### MIDWIFERY.

71. *Cæsarean Operation.*—In the *Archives Générales*, for February last, we find an extract from the thesis of M. JOLLY, a Parisian graduate, in which the author gives an account of the remarkable success of his father, a surgeon of Château-Thierry, in the performance of the Cæsarean operation. He has operated six times, five of his patients being country-women, and the sixth an inhabitant of the town. In all the labour had lasted at least forty-eight hours before the operation was performed; and the waters had been discharged. In one patient only of the six no fatiguing attempts had been made by midwives or accoucheurs to finish the labour. He always made the incision on the linea alba, between the navel and pubes, and divided the uterus in the same direction, taking care to restore it first to the perpendicular position if it was inclined. There was never any material hæmorrhage; no patient, indeed, lost more than two ounces of blood. In dressing the wound he always had recourse to the gastroraphy, which, instead of producing the ill consequences usually ascribed to it, appeared to him always to contribute greatly to the cicatrization of the wound. In two of the six cases no untoward symptom whatever followed the operation, and the cure was perfected before a month expired; in two others a smart degree of inflammation of the abdomen supervened, but was successfully combated by venesection, baths, and fomentations; and the remaining two died evidently of metropéritonitis, one on the fourth day, the other at a later period, when there appeared every chance of her recovering under the antiphlogistic treatment. Of the six infants four were born alive and survived; but two were dead after the operation was concluded, although they were thought to have been alive before it was performed. In no instance did hernia ensue; but there was always some prominence of the abdomen at the cicatrix, which had diminished from six inches in length to three only. These results are much more favourable to the operation than any previously published.

72. *Obliteration of the Vagina.*—M. LAMARCAU, of Geneva, communicated to the Royal Academy of Medicine, at their sitting of the 15th of March last, the case of a female, the mother of four children, and who when pregnant for the fifth time, injected into her vagina, for the purpose of exciting abortion, some sulphuric acid, which produced inflammation, and the obliteration of the superior two-thirds of this organ. The woman, nevertheless, went her full time, and after thirty-six hours labour, an unsuccessful attempt was made to open the passage with the knife. The patient died. The Cæsarean section was then performed, and a dead infant found. The uterus was ruptured at its middle on the left side, and to the extent of four or five inches.—*Berue Médicale*, April, 1831.

### MEDICAL JURISPRUDENCE AND MEDICAL POLICE.

73. *On the Grinder's Phthisis.*—It has long been known that of all unhealthy trades, none is equal in its ravages to that of the steel-grinder. The public attention has been for some time strongly attracted to the subject in Sheffield, by the miserable fate of the workmen of that class in the town; and, in conse-

quence, more accurate data have been supplied on the extent of the evil than in regard to any other trade in Britain. The whole information hitherto collected has been thrown by Dr. Knight of Sheffield into the form of an Essay, of which we shall here present an analysis.

The articles on which the Sheffield grinders are employed, are forks, awl-blades, fire-irons, razors, scissors, pen-knives, table-knives, large pocket-knives, files, joiners' tools, saws, sickles and scythes. Some of them use dry grind-stones only; others only wet grind-stones; others sometimes the one, sometimes the other. The total number in Sheffield is about 2500. They usually commence the employment at the age of fourteen, and, at this period, are, for the most part, raw-boned, uncouth, vigorous, hardy lads, apparently without any particular predisposition to pulmonary disorders. When their apprenticeship is concluded, in seven years, they generally proceed to work on their own account; but some are obliged to abandon the trade during their apprenticeship, being unable to stand the bad effects of the dust on the lungs. During the war a considerable number enlisted at an early age; but now, that this outlet no longer exists, they usually stick to their trade throughout life, though well aware of its fatal tendency.

Till the commencement of the last century, the grinders were not observed to be an unhealthy set of men; because they worked chiefly in the country, and mostly in large rooms open at the roof; they practised other departments of the cutlery trade at the same time, such as hafting and forging, and were consequently but a short time employed in grinding; and besides, they were often for months together only four or five hours a-day at work, on account of the scarcity of water, which alone then was used for driving the wheels. As trade increased, however, a greater subdivision of labour was introduced; in 1786 the steam-engine was substituted for water-power, and the grinders gradually became confined entirely to this employment, at which they worked eleven hours a-day, in the town, and in small rooms containing eight or ten stones, and frequently so many as sixteen workmen.

The consequences of this change of system on their health have been dreadful. The dry-grinders die between the age of twenty-eight and thirty-two; those who use both dry and wet wheels die at the age of forty, or forty-five at the utmost; and even the wet-grinders do not survive the age of fifty if they remain constantly at the trade. In 1822 it was ascertained, that among 2500 grinders of all classes, there were only thirty-five who had attained the age of fifty, and not above double that number who were forty-five; while among eighty adult fork-grinders, who use only dry stones, there was not a single individual thirty-six years old. The singular fact, too, appears to have been established, that the most industrious men were the shortest-lived, while the elderly men had in general led dissipated lives, so that even a combination of intemperance was advantageous, simply because it drew the workman in part from his fatal occupation. Some further statistical facts are supplied on the subject by Dr. Knight's experience as a medical officer of the Sheffield Infirmary; and they all tend towards the same conclusion. Among 250 grinders who had been in-patients and out-patients in Dr. Knight's department of the service between 1817 and 1830, 154 were received on account of pulmonary complaints; while among 250 persons of all other trades, 56 only had diseases of the respiratory system. Of the 154 cases of pulmonary disease among grinders, 13 died while under treatment in the establishment; while of the 56 pulmonary cases from other trades, only one died; showing not only that in the former pulmonary diseases are more common, but likewise that they are of a worse character. As to the respective ages of the 250 patients of the two classes, it appears that among the grinders 124 were above thirty, in other trades 140; above thirty-five, 83 grinders and 118 general tradesmen; above forty, 40 and 92; above forty-five, 24 and 70; above fifty, 10 and 56; above fifty-five, 4 and 34; above sixty, and 19.

According to Mr. Knight, the workmen almost invariably begin to suffer to-



wards the close of their apprenticeship. "Such," says he, "as are predisposed to pulmonary complaints soon begin to experience the injurious effects of grinding; and as at that time of life they are not too old to be put to other trades, they occasionally leave the wheel, and thus preserve both their lives and their health, while there more robust companions are sacrificing both. Grinders who have good constitutions seldom experience much inconvenience till they arrive at about twenty years of age. About that time the symptoms of their peculiar complaint begin to steal upon them; their breathing becomes more than usually embarrassed on slight exertions, particularly on going up stairs; their shoulders are elevated, in order to relieve their constant and increasing dyspnoea; they stoop forward, and appear to breathe most comfortably in the posture in which they are accustomed to sit at their work; namely, with their elbows resting on their knees. Their complexions assume a dirty, muddy appearance, their countenance indicates anxiety; they complain of a sense of tightness across the chest; their voice is rough and hoarse; their cough loud, and as if the air were driven through wooden tubes; they occasionally expectorate considerable quantities of dust, sometimes mixed up with mucus; at other times in globular or cylindrical masses enveloped in a thin film of mucus. Hemoptysis frequently occurs." The expectoration commonly becomes purulent as the disease advances, and is occasionally fetid. Thickening of the larynx or trachea also occurs, with tenderness and cough on pressure. The pulse at first ranging from 80 to 90, subsequently reaches 120. About the age of thirty the dry-grinders are commonly forced to relinquish their employment; and the wet-grinders are compelled to do so likewise about ten years later. By this time the dyspnoea and sense of choking up of the lungs are urgent; the cough is incessant; dropsy is added to the other symptoms in many; the usual symptoms of advanced phthisis appear; and death at last ensues, but not till after many months, or even years of acute suffering. This course is occasionally modified by accidental circumstances, inducing acute bronchitis, pleurisy, and peripneumony; which diseases are always severe, obstinate, and intractable. The acute symptoms of the grinder's phthisis may be frequently subdued by early and proper treatment; and there is no doubt that they may be even effectually dispelled if the individual can quit his unlucky trade. Without this, however, the relief obtained is merely temporary.

The best treatment in the early stage consists in rest, emetics, leeches, anti-phlogistic regimen, diaphoretics, mercurial alteratives, and saline aperients. Emetics in particular seem to procure immediate and great relief. In the second stage leeches, cupping, various counter-irritations on the chest and throat, digitalis, colchicum and squills are resorted to sometimes with advantage; and even in this advanced stage complete recovery may be brought about, if the trade is abandoned, as is shown by individuals regaining their health completely, and keeping it on entering the army.

Dr. Knight has had no opportunities of making any pathological observations on the state of the respiratory organs after death, as the grinders have had till lately a rooted aversion to morbid inspections. He is inclined, however, to consider the disease as a general bronchitis merely.

Some years ago a great deal of attention was paid by the master cutlers at Sheffield to the mode of preventing the deleterious effects here pointed out; and in consequence various contrivances were suggested for preventing the dust from being diffused through the apartments of the workmen. Every plan, however, has turned out more or less defective, and Dr. Knight says that no precautions are now taken. Among the methods devised two deserve mention. In one the wheels were enclosed in boxes, the inside of which was kept moist; a sufficient space was left free over the stone for the men to apply the instrument to be ground, and a set of magnets were placed over the free space to catch the steel dust. This device, however, was found ineffectual, because the steel dust only was caught, which perhaps is not the most detrimental part of it; and the magnets required frequent cleaning, which the workmen could not be



trusted to perform. The other was a simpler and more efficacious method. The wheel being inclosed in a box as above, a wide tube extended from the box to the external air; and it was found that the rotatory motion of the air around the wheel produced a strong current, which carried much of the dust away by the chimney. This current was aided in its operation by a fan placed at the upper orifice of the chimney and moved by the steam-engine. It appears, however, that this ingenious plan does not remove the finer particles of dust, which are probably the most injurious; and the contrivance has consequently been generally abandoned. Dr. Knight very properly suggests that by further improvements, such as the establishment of proper fixed currents in the ~~work-~~shops, and the careful removal of the previous day's dust before the men begin their operations, the plan last mentioned may at length be made so far effectual as greatly to diminish the inconvenience; and that what remains may be counteracted by restricting the period of working. But he complains that after a few years of excitement, the subject no longer seems to interest either the workmen themselves, their masters, or philanthropists at large.—*Ed. Med. and Surg. Journal*, July, 1831, and *North of England Med. and Surg. Journal* for August and November, 1830.

74. *Medico-legal Researches on Arsenic*.—M. HUNEFELD, of Grifswald, has published some interesting observations on this subject, in the *Archiv. für Mediz. Erfahrung v. Horn, Nasse und Wagner*, for September and October, 1829.

It is known that after poisoning with small doses of arsenic, it often happens, that in examining the body, none can be found, if it has been interred some time. The question that naturally presents itself is, what becomes of it? The author, from experience, thinks that it can disappear in one of two ways.

1st. It may combine with the tissues, and thus escape the ordinary reagents. In this case, M. Hunefeld treats the animal matter, supposed to contain arsenic with chlorine, and, by this means, he has frequently discovered traces of poison, which he could not find by the ordinary reagents.

2d. The arsenic may exhale in the form of an arseniated hydrogen gas; the author recommends from this circumstance, that, in disintering bodies suspected of being poisoned by arsenic, that the lid of the coffin be not taken off at once, but that a hole be made first in it to avoid the deleterious effects of gas.—*Bulletin des Sc. Méd.* Jan. 1831.

75. *Poisoning with a Tobacco-clyster*.—An interesting case of poisoning with a tobacco-clyster, is related by Dr. GRAHL, of Hamburg, in *Hufeland's Journal*, for October, 1831. Not having yet received that Journal, we take the following notice of it from the *Edinburgh Medical and Surgical Journal*. The subject of the case was a female, twenty-four years of age, who was liable to dyspeptic symptoms and obstinate constipation, on account of which she had been for a few days under the care of the relater, and with considerable advantage. One day the patient's mother proposed that a tobacco-clyster should be administered, which Dr. Grahl peremptorily prohibited. Nevertheless, on the following day she took the advice of a female quack of her acquaintance, who recommended a clyster made with an ounce or an ounce and a half of tobacco, boiled for fifteen minutes in a sufficient quantity of water. In two minutes after it was administered, the patient was seized with vomiting, violent convulsions, and stertorous breathing, which gradually became weaker and weaker till she died, three-quarters of an hour after the clyster was administered. The following were the appearances remarked in the body, which was examined two days after death:—Great lividity of the back, slight lividity of the abdomen, retraction of its anterior parietes, paleness of the lips, firm closure of the jaws, flexibility of the joints. The omentum very red, without gorging of its veins; the small and great intestines, both outside and inside, gorged with blood and red; and in some parts of the mucous membrane extravasated bloody patches. The other abdominal viscera in a natural state; the great vessels of the abdomen

more empty of blood than usual; the stomach natural; the lungs pale red; the heart empty of blood in both sides; the brain quite natural, and without any accumulation of serosity in the ventricles.

MEDICAL STATISTICS.

76. *Half-yearly Report of Cases in Midwifery, which have occurred in the Northern District of the London and Southwark Midwifery Institution.* By C. WALLER, Esq.

1831.	Number of Women delivered.	Sex of Children.		Born Alive.	Stillborn	Presentation.
		Males.	Females.			
January....	35	22	13	31	4	{ 32 Natural 1 Foot 1 Premature 1 Face to Pubis
February..	27	16	11	25	2	{ Natural
March.....	35	18	17	34	1	{ 34 Natural 1 Breech
April.....	29	12	17	25	4	{ 28 Natural 1 Breech 1 Premature
May.....	41	20	21	37	4	{ 39 Natural 1 Face to Pubis 1 Foot 1 Premature
June.....	38	24	15	39	0	{ 37 Natural 1 Face to Pubis 1 Case of Twins
Total.....	205	112	94	191	15	

*London Medical and Physical Journal, August, 1831.*

77. *Medical Statistics of Nantz.*—We find in the *Bulletin des Sciences Medicales*, for January last, a brief notice of an interesting memoir by M. MARASCHAL, on the mortality of the city of Nantz, contained in the *Journal de la Section de Medicine, de la Societe Academique du department de la Loire inferieure*, a journal we regret not yet having received.

The deaths from consumption in Nantz are one-tenth of the whole number, excluding those from epidemic diseases. The greatest mortality in phthisis occurs between the twentieth and fiftieth years of age.

Of the deaths from cerebral diseases, two-thirds are adults; but from hydrocephalus alone the deaths of children are to those of adults as twenty-two to three.

Of 64 deaths from apoplexy and paralysis, 7 only occurred in individuals below fifty years of age.

Organic diseases of the heart most frequently occur after the fortieth year of age, in the proportion of twenty-three to six.

The result of observations during twenty consecutive years, give the following as the succession of the months, arranged in the order of decreasing mortality, viz.—January, December, February, March, April, May, November, August, September, October, June, July. The months in the years 1827 and 1828, owing to the influence of epidemics, follow a different order.

## CHEMISTRY.

78. *Odour of Musk*.—M. BERT has found that the golden sulphuret of antimony entirely deprives musk of its odour. The kermes mineral converts the peculiar odour of musk into an alliaceous one. This last may be important in a medico-legal point of view. Sulphur alone does not produce any changes.

79. *Ilicine*.—At a meeting of the Royal Academy of Sciences of Paris, on the 23d of May last, M. DALLSCHAMP announced that he had succeeded in obtaining a new vegetable matter from the bark of the holley, to which he had given the name of ilicine, and which may be substituted for quinine in the treatment of intermittent fevers.

80. *Analysis of Urinary Calculi*.—The Medical and Physical Society of Calcutta have adopted the excellent plan of printing minutes of their monthly meetings, with an abstract of the papers read, and sending it to their members and correspondents. We have been favoured by their learned secretary, W. TWISING, Esq. who is known to our readers by his excellent papers on ophthalmology, with the minutes of their meeting of May last. We find in this the analysis of ten calculi by Mr. Twining. Of these, five consisted principally of lithic acid and lithate of ammonia—two of oxalate of lime—two of oxalate of lime with minute nuclei of lithic acid—one had a lithic acid centre and phosphate of lime exterior.

Mr. Barnard sent to the Society thirteen calculi, five of which consisted of lithic acid and phosphates—four of lithates and lithic acid—one fusible—one fusible and oxalate of lime with a trace of lithic acid—one oxalate of lime.

Mr. Brett presented seven calculi, four of which were composed of lithic acid and lithate of ammonia, with more or less of triple phosphate exterior—two of oxalate of lime with lithic acid nuclei—and one alternating, composed of lithic acid nucleus, thin lamina of oxalate of lime, then lithate of ammonia, and exterior of compact lithic acid.

“As far as the analysis of the calculi now before the Society will enable us to judge,” says Mr. Twining, “the urinary calculi of natives of India, appear to be subject to the same laws in respect to composition and formation, as obtain among Europeans in our own climate. Lithic acid, and lithate of ammonia, predominate in the calculi that have been yet collected in India; and we observe, that lithic acid, or oxalate of lime, are the most common nuclei of urinary calculi amongst natives. Whether the deposition of these substances, originally depend on some local disease of the kidneys and urinary secretion, or on constitutional disorder, the lithates and oxalates appear to coalesce most readily so as to form the nuclei of calculi. Whereas the morbid excess of the phosphates, though frequently existing in the state of fine white powder, or white sand, and in most constitutions readily deposited whenever a nucleus is afforded, are rarely found to constitute the centre of calculi. But when any extraneous body is lodged for a considerable time in the bladder, a deposit of the phosphates readily takes place in preference to the lithates or oxalate of lime; more especially if the foreign body be rough, and the bladder in a state of irritation. After the deposit of those substances, lithates and oxalate of lime has gone on for some time, it appears to cease; but the requisites to form concretions of the phosphates existing, namely, nucleus and irritation, the exterior of many large urinary calculi are composed of those substances, which rarely form the nucleus.”

## \* MISCELLANEOUS.

81. *On Gelatine as an article of Nutriment*.—The discovery of M. D'Arcet, member of the Institute, of the means of preparing the gelatinous matter of bones, so as to form a cheap and wholesome article of food, has excited great attention in Paris. More than two years have elapsed since the discovery, and



the system of M. D'Arcet has been adopted in several of the hospitals, and in the *Maison de Refuge pour l'Extinction de la Mendicité* of M. de Belcyme. The gelatine has also been used in making sea-biscuits, which were used by the troops during the late expedition against Algiers. The mode of preparing both the gelatine and the biscuits is minutely laid down in the pamphlets published by M. D'Arcet. These experiments had invariably been attended with success; but on the 6th of June, M. Donné, a young medical student, communicated to the Royal Academy of Sciences at Paris, some remarks tending to throw a doubt on the subject. He stated, that being deeply impressed with the importance (particularly to the lower classes) of ascertaining whether the gelatine did really possess the nutritive qualities attributed to it by M. D'Arcet, he resolved to go through a series of personal experiments on the subject. With this view, recollecting that ten grammes of dry gelatine were stated to be equivalent to half a litre (about two basins) of the best meat broth, he began by taking that quantity every morning with three ounces of bread, and gradually increased the quantity up to fifty grammes, which constituted his sole nourishment up to six o'clock every day; the gelatine was differently flavoured, so as to prevent its exciting any feeling of nausea or disgust. During the six days which this experiment lasted, M. Donné experienced a constant sensation of sinking and feebleness, and on the sixth day found that he had lost two pounds weight. The next week he substituted ordinary meat broth for the gelatine, taking a litre and a half (about five or six bowls,) and from four to five ounces of bread daily; during this week he experienced no sensation of feebleness, and at the end of it had regained a pound and a half of his lost weight. At the same time M. Donné tried similar experiments on two dogs, giving the one, gelatine mixed with a little bread, and offering the other nothing but simple gelatine. The former at first refused it, but at length ate daily as much as was equivalent to twelve or fifteen half litres of good broth. On the sixth day the dog had lost four ounces in weight, and was so voracious that he even greedily devoured some white lead prepared for cleaning plate, and during the second week totally refused gelatine, living only on about an ounce and a half of bread which was given him per day. He ultimately terminated the experiment by climbing to a great height, and taking possession of a quantity of boiled beef which was supposed to be out of his reach. The other dog could not be prevailed on to touch the gelatine, even after being for five days totally without food. M. Donné, therefore, considered it cruel to pursue the experiment further, and gave him his usual food. From these circumstances, M. Donné was induced to doubt the nutritive qualities of gelatine, and begged the Academy to appoint a committee to investigate the subject, which was accordingly done. At the succeeding meeting (13th June) M. D'Arcet addressed some observations to the Academy on the subject alluded to by M. Donné; he stated that butchers' meat contained, on an average, in every 100 lbs.—Dry meat, 24 lbs.; water, 61; bone, 15, total, 100 lbs. Bones contain on an average—Earthy substance, 60 lbs.; gelatine, 30; fat, 10; total, 100 lbs.

From this calculation it is evident that the 15 lbs. of bone contained in every 100 lbs. of meat would furnish 40-100 of their weight, or 6 lbs. of animal substance, so that 100 lbs. of meat, which now furnish but 24 lbs. of dry meat, might, by rendering the gelatine and fat of the bones available, supply thirty, or in other words, four oxen would furnish as much alimentary substance as is now obtained from five. With respect to the nutritive and salubrious qualities of gelatine, he remarked, that the committee appointed by the Faculty of Medicine, consisting of MM. Le Roux, Dubois, Pelletan, Dumeril, and Vauquelin, after having given gelatine soup to forty patients and others, during a period of three months, came to the conclusions:—1. That the use of gelatine was both an amelioration, and a source of economy in the alimentary system. 2. That gelatine soup is at least as palatable as the ordinary hospital soup; and 3. That gelatine is nourishing, easy of digestion, and wholesome, and cannot in any manner, be productive of injurious effects on the animal economy. The apparatus in the hospital of St. Louis is capable of preparing nine hundred soups per day;

it has been in use twenty months, and has supplied 556,800 portions of gelatinous food. Numerous reports have been made on the subject to the general administration of the hospitals, all of which agree in stating that the change in the mode of nourishment is a decided improvement; that the convalescent patients acquire strength much more rapidly than before; that it is a source of economy highly important to the poor; that part of the meat formerly employed in making soup may now be given to the patients, either roasted or in other forms; and finally, they all recommend the adoption of the system of gelatinous nourishment in all similar establishments. At the Hôtel Dieu, 443,650 rations of gelatine have been furnished in fifteen months and a half; and six reports have been made, all of which are equally favourable with those above referred to. They state particularly that since gelatine has been employed, thirty kilogrammes of roast meat may be given to the patients daily, without reducing the quality of the soup at all below its former standard.

When M. D'Arcet had concluded his remarks, M. Gay Lussac animadverted in strong terms on the injustice and insufficiency of the mode of experiments adopted by M. Donné, which he characterized as wholly inconclusive, although calculated to produce a most injurious effect on the public mind, which is always easily impressed with the idea that the poor are neglected, particularly in hospitals. He reminded the Academy that it was well known that no single substance was alone sufficient to support animal nature; that animals fed on sugar alone had died from inanition; yet it would not be pretended that sugar is destitute of nutritive qualities; and though the nutritive qualities of potatoes, taken with other food, are universally known, a dog fed wholly on that vegetable dies in six weeks; whereas M. Donné wishes it to be supposed that because two dogs refused to live upon gelatine, administered alone, we know not how, and because M. Donné himself grew thin on a sudden adoption of simple gelatine diet, the adjunction of gelatine, as an addition to, and taken in conjunction with animal food, is wholly without advantage. On the 20th of June, M. Donné replied to M. Gay Lussac, by saying that his sole object in proposing the question was to have it fully and fairly investigated; since if it can be established that gelatine does possess the nutritive qualities ascribed to it, the advantage to the poorer classes will be immense; whereas, on the other hand, should they be induced to employ the bones as a means of nutriment, when the fact may turn out to be that the gelatine is not nutritious, their condition is rendered more deplorable than before. In conclusion, he said that he rendered full justice to the active and pure philanthropy of M. D'Arcet, which had induced him to make the greatest sacrifices both of time and money, in order to bring the gelatinous system to perfection.—*The Journal of the Royal Institution of Great Britain, August, 1831.*

82. *Cholera*.—We had intended in the present No. to have given a summary of the present state of our knowledge in relation to this disease, and for this we have ample materials, the press having been extremely prolific in accounts of the progress and speculations on the nature and most successful mode of treating this scourge. We postponed it however for the purpose of making room for a review of a work which the profession have been anxiously expecting, and the sheets of which, as far as printed, we were favoured by the publishers with a copy of. After this review, however, was actually in type, the completion of the work having been unexpectedly delayed, we were compelled to postpone the review. This occurred at too late a period to permit us to arrange, in proper form for publication, our notes on cholera; and we can only at present state, that that disease was extending its ravages at the latest dates, and that the most contradictory statements are given respecting every point relating to its mode of propagation, nature, and best method of treatment. From this mass of conflicting testimony, we shall in our next No. endeavour to present as clear a view of the subject as a looker-on, who has no preconceived notions in relation to the subject, may take, after a careful examination of the statements on both sides.



## AMERICAN INTELLIGENCE.

*Remarks on the Climate of the Lower Country of South Carolina.* By THOMAS Y. ~~WELLS~~, M. D. Port Physician and late President of the Medical Society.—In an interesting essay on malaria in the last number of this journal, by Dr. Caldwell, I was surprised to observe the following observations in a note. “The low lands of the Carolinas, and I believe also of Georgia, are much healthier now than they were at the close of the revolutionary war. *The cause is obvious.* They are under higher cultivation. At the period referred to, white men could not labour in them and retain their health. Negroes were therefore necessary. But they are less necessary now. *In twenty or thirty years more, perhaps within a shorter period, they will not be necessary at all,*” &c.

It is my object in this communication to correct the error which Dr. Caldwell has so strangely fallen into. It is an observation of Cullen, “that there are more false facts than false theories in medicine,” and my reading continually convinces me of the truth of the remark of that great physician.

The lower country of South Carolina, in place of being more healthy, is decidedly more sickly. Many situations where large families are reared, cannot now be inhabited during the summer and fall, except at the imminent risk of life. The reasons for this change are, I apprehend, these. 1st. That a great quantity of trees have been destroyed for clearing land for cultivation, for fences to enclose the land, and in some places for fuel to supply Charleston; and 2d, that the reservoirs, swamps, and ponds, with which the lower country of South Carolina abounds, remain stagnant, and in no manner drained. I concur with Dr. Caldwell, that wherever lands are well drained, and a proper dry culture is introduced, the healthiness of a country will be improved, and that the draining must be complete: but I deny that any such improvements in the lower country of South Carolina has occurred, or is, I fear, likely to occur. There are on the contrary many plantations, the residence of our ancestors, which are abandoned because the product of the land would not be equivalent to the expense of cultivation, and so far from being improved they have run to waste.

In our lower country there are many small villages located in the pine land, the soil of which is barren and porous, studded with pine trees, and remote from any large swamps or reservoirs, and the only manner in which health is here preserved is the caution used in preventing a single tree to be cut down, or cultivation of any kind to be carried on. Wherever this rule has been deviated from, the villages have become sickly. But no one thinks of residing on their plantations during the summer, while our elder planters and our ancestors did reside on their places, thus showing that our country, in place of being more healthy, is actually more sickly, and in this assertion I am confident I will be sustained by the opinion of every medical gentleman in the lower country of South Carolina.

I shall now reply to the unauthorized conclusion to which Dr. Caldwell has arrived at, by a very illogical course of reasoning, viz. assuming false data. Dr. C. remarks that, “In twenty or thirty years more, perhaps within a shorter period, they (the negro slaves) will not be necessary at all. White men will do their work to greater advantage. By that condition of things, the abolition of slavery in our country will be greatly facilitated.” Now this I unhesitatingly declare to be as incorrect a statement as could possibly be made. I am aware that some individuals from a false idea of philanthropy, are desirous of making the slaves free, to be miserable, even at the expense of the life and happiness of their fellow creatures the whites. In



their Quixotic crusade, they will listen neither to reason or truth. They will not believe that the condition of our slaves are better, incomparably better, than the negroes residing at the north, or the peasantry of Europe, and they gladly seize upon every opportunity of upholding the principle of universal emancipation, a principle noble in the abstract, but which never perhaps can be fully realized, unless at a sacrifice too great for the experiment to be made. Be this however as it may, it is evident that Dr. Caldwell's assertion is calculated to cherish the hopes of the abolitionists, and lead them to efforts which may be dangerous in their consequences. I therefore must ask your indulgence when I show the fallacy of the conclusion to which Dr. Caldwell has arrived.

I have already asserted, and my assertion will be borne out by the testimony of every physician of the lower country of South Carolina, that so far from the country becoming more healthy, it is actually becoming more sickly, and so far from any improvements being made by cultivation, that many places are deserted, and those plantations which are in the highest state of cultivation are too sickly for white persons to live on with impunity, because it is not, nor will be for centuries, practicable to clear off the immense reservoirs, swamps and ponds with which our lower country is filled. But supposing the country appropriated to dry culture should be so far improved and drained, what is to become of our extensive rice fields, and the large reservoirs which are necessary to flow the rice fields, and which are highly important? It is admitted by Dr. Caldwell, that rice culture is not suited to the healthiness of a country, a fact by no means new, and does he expect that South Carolina will give up this immense source of wealth? This idea is preposterous. It is evident, therefore, so long as rice is cultivated, so long will our lower country be sickly. Now it is known that during the summer and fall months, the negroes are most healthy, while the whites cannot live on rice plantations without early losing their lives or dragging out a miserable existence of disease. In short, while the negro is fat, glossy, and in full health, the white is pale, shrivelled, and dropsical. Many Europeans and northerners have attempted to reside during the summer on plantations as overseers, but have either died, or have had their constitutions broken, and the children who are born in the country, and live all the year on the plantations, are lazy and inactive, because their physical energies are exhausted from continual disease from infancy. They have immense spleens, and are pale and cadaverous, while the negroes who live in the country are infinitely more healthy than those who live in the city, and more so, I do not hazard too much in saying, than any class of labourers in the world.

These facts I defy any one to contradict, and I feel fully warranted in the assertion, that the lower country of South Carolina can never be cultivated by a white population; that it would be to them, under such an attempt, as the Pontine marshes of Italy were to the Italians, and like that once luxuriant spot, studded over with villas and palaces, it would be only the scene of pestilence, poverty, and desolation. It is not my intention to animadvert upon the essay of Dr. Caldwell, but believing it important that so serious an error, coming from such high authority, should be corrected, I have been induced to address the antecedent remarks to you.

Charleston, Sept. 22, 1831.

*Notice of a Trial for Infanticide.* By JOHN ANDREWS, M. D. (Communicated in a letter to R. E. GRIFFITH, M. D.)—The trial for infanticide, the result of which, in your polite communication of July 20th, you expressed a desire to be informed of, took place last week before the Supreme Court of Ohio, setting in Jefferson County.

I will briefly enumerate the *medical facts*, and give you the professional opinions based upon them, as they were almost the only evidence produced upon the trial.

In June last, the body of an infant female negro was discovered in the vault of the privy upon Mr. H.'s premises. A black woman employed in the family was

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charged with being the mother. She at first denied, but afterwards acknowledged the fact, and said it was born the day before, that being a dead child, she did not wish to make a noise about it, and had laid it to one side over night, and thrown it into the privy about day-light that morning. This was between eight and nine o'clock, A. M. She was a married woman, had had several children, but she and her husband had been living apart for the last year.

Being removed from the vault, and slightly washed in cold water, the body presented these appearances. The placenta was attached to the umbilical cord, both of which had a perfectly natural appearance. The size of the child was that of one born at maturity; its physical organization, as far as was observed, being also entirely perfect. The head was round, the chest prominent, the abdomen free from tympanitis, and every other evidence of putrefaction. About the anus, there was observed some meconium. On one side of the upper part of the windpipe, there was several, and on the opposite side one curved mark, as if made by the nails of the thumb and fingers of an adult hand. These were confined to the cutis, had no appearance of ecchymosis about them, and were so like to, as to be confounded with an incision in the skin, with the point of a scalpel, during the examination.

Over the left malar bone, there was a small contusion, confined to the skin, accompanied with slight ecchymosis, into the cellular membrane beneath. The entire circle might have been covered with a copper. Over the left frontal protuberance, there was a similar contusion accompanied with about the same general appearances. Over the right eye-brow, there was a very small bruise, the size of a dime, free from any marks of bloody discolouration. Under the scalp, upon the pericranium, there was an extensive ecchymosis, extending between the fontanelles, and laterally half way down the parietal bones. It was posterior to both the external marks, and having no apparent connexion with or dependance upon them. The dura mater was closely adherent to the under surface of the cranial bones; the venous vessels of the pia mater engorged with blood; the substance of the brain presented no traces of lesion; the examination of the encephalon, however, was by no means so minute as was desirable. Within the trachea, no change of colour in the mucous lining, nor other morbid change, was noticed.

On opening the thorax, its viscera presented a natural aspect. The lungs were reddish; when cut into, dark blood appeared in spots, and might be squeezed from the incision. In cutting through the root of one lung, considerable dark blood ran from the pulmonary vessels. The entire lung, and sections of it, floated lightly upon water of the temperature of the atmosphere in the shade, both before and after compression in the hand. By the mode of opening the thorax, the form of the diaphragm was lost. The abdominal viscera were healthy, and free from the slightest marks of putrefaction; the colon contained some meconium; the bladder was rather softer to the touch than when it has been known to contain urine, but was not examined within. The vena umbilicalis contained a little blood.

Drs. Judkins, Leslie, Dickson, and Andrews, being sworn, testified to the above facts. From them, they had no doubt of the child's having *breathed*; but this might, and did frequently occur, before the delivery even of the head, and was of every day's occurrence, when the head only had passed the os externum, the shoulders and body being retained within the organs of the mother.

As to the question, whether the death of the child was caused by violence? Dr. Judkins was of opinion, that the violence producing the marks upon the head, was sufficient to produce death, which it had done, as he supposed, by concussion of the brain. Dr. Leslie entertained the opinion that death had been produced by strangulation, as he had seen at severe injuries upon the head of a new-born child from the application of the forceps, without causing death.

Drs. Dickson and Andrews, regarded all the morbid appearances as equivocal; that upon the face and os-frontis were evidently the result of force applied



during the life of the child, but even when then made, they were not sufficient to cause death. They exhibited no lesion of any vital organ. The large ecchymosis might readily occur in the delivery, without any agency on the part of the mother. Cerebral concussion might have taken place, and even caused the death of the child, but this could not be demonstrated. Concussion left no trace behind it. Strangulation was not to be assigned as the cause of death, in the absence of those traces which it leaves upon the body, as we are told, in every case. It was quite possible, in their opinion, for all these marks to have been produced by the attempt of the mother to deliver the body of the child, rendered difficult sometimes by the great size of the shoulders, or the abatement of uterine contraction, occurring singly or together. It is not uncommon for women, in the pangs of labour, to throw their body in many postures, and to attempt to assist themselves by the use of their hands. On the whole, the marks upon the body, they thought, should be looked upon as strongly *suspicious*, but as wanting confirmation from other sources, to make out the murder.

The other evidence brought forward not being pointedly confirmatory, the court stated to the jury that they ought not to convict in a case of this kind without the most unequivocal proofs of guilt, and they did not hesitate to say, in the present case, that the evidence was insufficient to convict.

The Jury acquitted the prisoner.

Steubenville, Ohio, Oct. 1831.

*Case of Great Abdominal Disorganization—Death by Apoplexy.* By RICHARD D. MOORE, M. D. one of the House Physicians of the Philadelphia Alms-house. —Martin M'Donna, aged thirty-seven years, tall, remarkably pale, and somewhat emaciated, was admitted into the men's medical ward of the Philadelphia Alms-house, on the afternoon of the 14th of October, 1831. He was so much exhausted, that I did not deem it proper to fatigue him by asking any questions regarding the history of his disease, but ordered him to bed, and permitted him to rest, giving him occasionally a drink of wine and water. His friends could give me no satisfactory account of him—they only know that he had been complaining for several months.

I saw him again in a few hours; he had had some sleep, felt more composed, had little or no pain, his skin warm, his pulse a little fuller, but still weak and very compressible, tongue moist and red in the centre, edges pale. I now attempted, but without success, to obtain from him a satisfactory history of his case; he became fatigued, and appeared to be confused in his memory; I could only learn that he had had a dysentery for more than two months, that he had suffered much on going to stool, and sometimes he would be compelled to go as often as thirty times in the twenty-four hours; discharges very small, and occasionally mixed with blood; that he was principally troubled at night. I could learn nothing of the first symptoms: the only object, therefore, I have in drawing up this case, is to represent the manner in which he died, and the post mortem appearances.

7 o'clock, P. M. He was now in much pain; his bowels open every twenty or thirty minutes, discharges very offensive, and consisting of mucous tinged with blood, and a few dark collections resembling slate dust. Ordered injections of mucilage made of *Ulmus americana*, with tinct. opii, gtt. xxx. this to be repeated every hour, and every second hour add sulph. zinc. grs. iv.; his abdomen rubbed with vol. linim. every thirty minutes; wine whey every hour, and as a common drink, viz. R. Ulm. americ. ℥i.; pulv. g. acac.; pulv. tragac., pulv. salep, aa. ℥i.; sacch. alb. ℥ss. Boiling water, a pint; half given every hour. 10 P. M. Easy. Blister to abdomen, extending over the region of the colon.

15th. This morning felt better, and expressed a wish for something to eat; his pulse very weak and small; skin pale, and disposed to be cold; his tongue dry, and his voice feeble. Continued the injections, with increase of tinct. opii, gtt. xl.; the discharges not so frequent last night as usual, nor were they so painful. Continue mucilaginous drink and wine whey as before, and a table-



spoonful every two hours of the following:—*R.* Cret. prep.  $\mathfrak{z}\text{iii.}$ ; tinct. opii,  $\mathfrak{z}\text{ii.}$ ; simp. syrup.  $\mathfrak{z}\text{ss.}$ ; aqua cinna.  $\mathfrak{z}\text{i.}$ ; mucilage acac.  $\mathfrak{z}\text{iv.}$  3 o'clock, P. M. Felt a little head-ache, and became drowsy. Ordered warm foot-bath.

16th. This morning no head-ache; his pulse the same as yesterday; face still pale, though some fever, skin being hot and dry; tongue a little moist. Stop wine whey, and continue the treatment of yesterday; bowels opened eight or nine times through the night; pain not so great. 7 P. M. Skin cold; pulse sinking; could not speak aloud. Mustard to extremities, and hot brandy toddy occasionally.

17th. A little better; discharges not so frequent; pulse a little fuller, but weak; skin moist, and warm; tongue moist. Ordered to continue same treatment with a spoonful of the essence of beef every three hours.

18th. Slept tolerably well last night; this morning very weak; discharges increased, or rather the desire to evacuate, the matter discharged very offensive, and of dark watery consistency. Ordered pulv. opi, grs. vi. ft. pil. introduced into rectum. Continue same treatment, suspending the injections until the pill had been discharged. 3 o'clock, P. M. Had an apoplectic fit which continued for fifteen minutes. It returned at 4, or a little after, and he died in a few minutes.

*Post mortem examination, twelve hours after death.*—*Head.* A good deal of congestion in the scalp, principally venous. Dura matter healthy, but distended on the right side, caused by a coagulation of effused blood between the membrane and the arachnoid, extending from the middle of the frontal bone to the right leg of the lambdoidal suture, and from the petrous portion of the temporal bone to the sagittal suture. This coagulum was near a quarter of an inch thick; the blood, dark venous. Upon a minute examination with the naked eye, no rupture of any vessel could be discovered. The substance of the brain a little congested. The ventricles half filled with bloody serum. The cerebellum and medulla oblongata, healthy.

*Thorax.* Contents of this cavity healthy.

*Abdomen.* The peritoneum much thickened, and of a dirty white colour; that portion covering the colon hard, and in some of its folds contained a fluid resembling milk.

*Stomach.* Mucous membrane thickened, and in places intensely red, particularly the cardiac extremity. Contents of glairy mucus.

The *duodenum* pretty much as the stomach, as regards its colour, but the mucous membrane was not thickened. The small intestine healthy, with the exception of the lower extremity, which was inflamed. Contents yellow, and not quite the consistence of soft soap.

*Colon.* So entirely changed, as scarcely to be recognised, being in some places half an inch thick, and in others one or two lines more; its feel was hard and indurated, resembling gravel, under the peritoneum. It was opened its whole length; the mucous membrane of the upper portion, about two-thirds, thickened three lines, the remaining third was entirely disorganized, and must have been insensible before death, or nearly so. The upper portion contained ulcers, some as large as a quarter of a dollar, elevated, and of a dark gray colour; smell being offensive; the lower portion of the colon, and the upper portion of the rectum, resembled very much an ulcerated cancer. In dissecting the coats thus thickened, I found several tubercles, having every appearance of recent tubercles of the lungs; some were softened and contained pus.

The *liver* was of the natural size, but tuberculated near its surface, not much injected; gall-bladder filled with bile, very thin, and of a greenish colour; the coats of the bladder healthy.

*Spleen.* Enlarged to near twice its natural size, softened to the consistency of soft soap.

*Pancreas* hard, and changed in colour, being darker than natural.

*Kidneys and urinary bladder* healthy.

*Case of Aneurism of the Brachial Artery, cured by Compression.* By J. W. HUSTIS, M. D. of Cahawba, Alabama.—On the 27th of August, I was called to visit the wife of M. M. who was represented as having a swelling or rising on the arm, in consequence of bleeding. On arriving, I found that a large and diffused aneurism had formed at the bend of the arm. The tumour occupied a diameter of about three inches, with a projecting pulsating apex, over which the skin was extremely thin, and through which the blood could be distinctly perceived whizzing and thrilling at every pulsation. The pain of the limb was excessive, so that for the last three or four days, sleep had been entirely prevented. The history of the case was as follows:—The woman was in the advanced stage of pregnancy, and to relieve the usual unpleasant symptoms occurring on such occasions, recourse was had to venesection. The operation was performed by a neighbouring farmer, an old gentleman, destitute of scientific knowledge, but whose experience in that line had been considerable, and hitherto successful. The nature of the accident, however, remained unknown; nor, although there was considerable difficulty in stopping the bleeding, was it supposed that any alarming or extraordinary occurrence had taken place. The external orifice healed, and the woman, who was in the lower circumstances of life, resumed her usual domestic occupations, which were rather laborious and fatiguing. In a few days, a throbbing tumour made its appearance at the place where the operation of bleeding had been performed. For several weeks this produced but little uneasiness, and therefore received but little attention. At length, however, from a small, compressible, circumscribed tumour, a diffused hardness and swelling took place, occupying nearly the whole bend of the arm. Great pain and lameness now ensued, and the limb was deprived of the power of muscular exertion.

Such was the situation of the patient when I saw her. I immediately explained the nature of the case and accident, and informed the family of the necessity of an immediate operation. The patient wept and shuddered at the cruel alternative, though had I been urgent, she would have finally submitted. She was within a few days of her confinement, and it was dreaded that an operation at the time might have had an unfavourable effect upon her situation. I therefore told them that there was another, though a doubtful expedient; that no injury could result from its trial, although I apprehended that the case was too far advanced to admit of any permanent relief being obtained in any other manner than by taking up the artery. At least it was hoped that time might be gained, so as to postpone the operation till after the accouchement. The expedient proposed was compression; this was, therefore, acceded to, though on the part of the husband with the apprehension, that the expense of another visit, and an operation, must be finally submitted to.

I now proceeded to make compression on the aneurism and brachial artery, in the following manner. I took two twelve and a half cent pieces, and a twenty-five cent piece, and wrapped them in a rag, so as to prevent their slipping. I then made a thick linen compress, and wet it with a solution of sugar of lead; this, with the silver next the tumour, I applied over the aneurism, and secured by a bandage, as in cases of tying the arm after ordinary venesection, but much firmer and more securely, by repeated turns of the bandage above and below the elbow. Having applied the necessary degree of pressure in this manner to the aneurism, I proceeded also to make a degree of compression upon the brachial artery; for this purpose, another thick compress, four or five inches in length, wet with the saturnine solution, was laid along the course of the artery, and bound down with some degree of firmness by numerous turns of a tolerably broad bandage. This last application was for the purpose of diminishing the impetus of blood into the aneurismal tumour. Upon applying my fingers to the radial artery, I found that its strength and force was considerably lessened. I now left the patient, with directions to see that the bandage did not become too loose, and if so, to readjust it with such a degree of tightness as she could endure without much pain. I neither saw nor heard from the patient till the



expiration of a month. I then saw her husband, who expressed many acknowledgments, stating that my directions had been faithfully followed, and with the most fortunate success; that the swelling had almost entirely disappeared; and that the pain of the arm had ceased; that his wife had commenced using her hand, and considered herself almost completely well; although for fear of a return of the aneurism, the bandage was still retained.

I had previously found the efficacy of pressure, in a wound of an artery from bleeding. This happened in my own practice, in the case of a negro woman. The scarlet arterial blood flowed out *per saltum*. With some alarm I was induced to tie up the arm, which I did with a compress over the wounded vessel in the manner above described. A firm pressure was in this manner applied, until the orifice had healed; which it did in the ordinary time after vesication, without any disposition to the formation of an aneurism.\*

The manner in which pressure operates in the cure of aneurism, appears to admit of easy explanation. It has been proved by experiment and observation, that in tying an artery a coagulum of blood is found immediately behind the ligature, filling up the calibre of the artery, so that were the ligature removed after the formation of this coagulum, no hemorrhage would or could take place. Now in the case of a wound or rupture of an artery, the blood escapes from the vessel, and continues to distend the sheath, and cellular substances surrounding it, forming a coagulum exterior to the wounded artery, but of no avail in preventing the exit of arterial blood. If, however, the force of the blood can be impeded, and its gush from the wounded orifice suppressed, a coagulum is found in the immediate vicinity of the wound, and an opportunity thereby given for the healing of the latter.

Although several cures of compression have been related in cotemporary journals, still such instances are looked upon as extraordinary, and rather accidental, and not sufficient to warrant the practice as being generally applicable and expedient. From the cures, however, that have been effected in this manner, I think we are fully and more than authorized in its employment, in all cases of brachial and popliteal aneurism, or whenever the contiguity of a bone affords sufficient resistance for its application. It is true, that in the hands of ignorance and incompetence, such practice might be productive of serious and dangerous consequences; but for sacrilegious assumption and intrusion, licensed and unlicensed butchery and murder, this advice is not intended; the field of their operation is already sufficiently extensive, without opening new avenues for death.

In the Philadelphia Journal of Medical and Physical Sciences, No. 4, new series, p. 363, the reader may find a variety of ingenious contrivances for making compression in cases of brachial aneurism, by W. B. Fahnestock, M. D. and among others a kind of truss, fitted to the arm with an elastic steel spring, on the principle of the common truss for scrotal hernia. Dr. F. reports a case of brachial aneurism successfully treated by the application and use of this machine. A contrivance of this kind may be found advantageous, although I have experienced no difficulty in retaining to its place, and with sufficient accuracy and firmness, the common bandage previously mentioned.

*Treatment of Ununited Fracture with the Seton.*—In a former No. of this Journal, (Vol. VII. p. 267,) we gave a summary of the cases of ununited fracture treated by the seton, to be found in the works within our reach at the moment. Our valued collaborator, Dr. A. F. VACHÉ, of New York, writes to us that in addition to the cases there enumerated, Dr. MORR has treated eleven cases of ununited fracture by that remedy. Of these, three were of the os femoris, three of the tibia, and five of the humerus. In all of these it succeeded

\* We have had a case entirely similar to this; and after much consideration we have been led to doubt, from the result, whether the artery was actually wounded—the only evidence being the colour of the blood and its flowing *per saltum*. The patient was suffering extreme agony from rheumatism of the heart, and in that disease it is not, we suspect, very uncommon, when a vein is opened, for the blood to exhibit the arterial colour and to flow *per saltum*.—Ed.



perfectly, except in three of the last mentioned, and which were afterwards cured by sawing off the ends of the bone.

We have also recently met with, in the seventh volume of the New England Medical Journal, an account of a case of ununited fracture of the humerus, successfully treated by the seton, by ROBERT THAXTER.

*Operation of Lithotomy.*—This operation has been performed on the venerable Chief Justice of the United States, by Professor PURSER, with his usual skill. The operation was somewhat protracted, from the immense number of calculi, between eight hundred and one thousand, contained in the bladder. These calculi varied in size from that of a pea to that of a pin's head. We are happy to announce that at the present moment, two weeks since the operation, the patient is doing extremely well, and there is every prospect of his valuable life being prolonged many years. We have been promised the details of the case for a future number.

*Goupil's Exposition of the Principles of the New Medical Doctrines.*—We congratulate the profession on the appearance of Dr. NORR's translation of this work. A review of the original will be found in Vol. VIII. p. 156, et seq.

*On Baths and Mineral Waters.*—An elaborate work on baths and mineral waters, by Dr. JOHN BELL, has just been published. We received the work too late to be able to do more than just glance at its contents, but we know that the author has paid great attention to the subject, and have no doubt that he has collected a large amount of valuable and interesting information in relation to it.

*Dr. Peixotto's Address.*—We have read with great pleasure the address delivered before the Medical Society of the city and county of New York, on the 25th of July, 1831, by D. L. M. PEIXOTTO, M. D. President of the Society. The learned author gives an interesting though brief sketch of the medical history of the state of New York, and offers some judicious suggestions for the improvement of the condition of the medical profession.

*Faraday's Chemical Manipulation.*—An edition of this work, with notes and additions by Dr. J. K. MARCHALL, has just been issued by Messrs. Carey & Lea. We have met with no other work containing such a mass of useful information on the practice of experimental chemistry. It is an invaluable laboratory companion.

*Essays on the Materia Medica.*—MR. G. W. CARPENTER having been frequently called upon by his medical friends for copies of his papers published in the Philadelphia Journal of the Medical and Physical Sciences and in this Journal, has been induced to republish them, with an account of the new proximate principles, the popular remedies lately introduced into practice, the formulæ for their preparation, &c. &c. The whole are comprised on a small volume, which will no doubt be an acceptable present to the country practitioner.

*Louis on Gastro-Enteritis.*—Dr. F. M. ROBERTSON, of Augusta, Georgia, has in preparation a translation of this interesting work.

*University of Pennsylvania.*—At an adjourned meeting of the trustees, held October 21, 1831, the following report was made, and the resolution attached thereto adopted, with instructions to the secretary to communicate a copy of the same to Professor Physick, and to the medical faculty.

*University of Pennsylvania, 21st October, 1831.*

The committee to whom was referred, on the 14th inst. the resolutions of the medical faculty, respecting the resignation of Professor Physick, fully coinciding with the views and feelings expressed by the faculty, beg leave to recommend to the board of trustees the adoption of the following resolution:—

Resolved, that in consideration of the important services rendered to the Medical Department of the University by Professor PHILIP SYNGE PRYSICK, in the chair of Surgery as well as of Anatomy, during a period of twenty-six years, and for the purpose of continuing his connexion with the school, to the fame and usefulness of which he has so largely contributed, there be conferred on the said PHILIP SYNGE PRYSICK, the honorary appointment of Emeritus Professor of Surgery and Anatomy in this University.

From the minutes.

(Signed,)

JAMES C. BIDDLE, *Secretary, &c.*

*Boylston Medical Prize Questions.*—The Boylston Medical Committee of Harvard University, give notice that the following Prize Questions for the year 1832, are before the public, viz.

1st. "What is the cause of *Fistula Lachrymalis*, and what is the best mode of treating the disease?"

2d. "What are the circumstances in which the drinking of cold water in hot weather proves injurious? What are the diseases which arise from this cause, and what is the best mode of treating these diseases?"

Dissertations on these subjects must be transmitted, post paid, to JOHN C. WARREN, M. D. Boston, on or before the first Wednesday of April, 1832.

The following questions are now offered for the year 1833, viz.

3d. "The History of the Autumnal Diseases of New England."

4th. "What insects of the United States, and particularly in the northern part, are capable of inflicting poisonous wounds? The phenomena of such wounds, and the best mode of remedying their ill consequences?"

Dissertations on these subjects must be transmitted as above, on or before the first Wednesday of April, 1833.

The author of the successful Dissertation on either of the above subjects, will be entitled to Fifty Dollars, or a Gold Medal of that value, at his option.

Each Dissertation must be accompanied with a sealed packet, on which shall be written some device or sentence, and within shall be enclosed the author's name and place of residence. The same device or sentence is to be written on the dissertation to which the packet is attached.

All unsuccessful dissertations are deposited with the secretary, from whom they may be obtained if called for within one year after they are received.

By an order adopted in the year 1826, the Secretary was directed to publish annually the following votes, viz.

1st. That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which the premiums may be adjudged.

2d. That in case of the publication of a successful dissertation, the author be considered as bound to print the above vote in connexion therewith.

Boston, August 10th, 1831.

GEO. HAYWARD, *Secretary.*

*Medical College of South Carolina.*—Dr. E. GEDDINGS has been elected Professor of Pathology in this institution, and Dr. WAGNER Professor of Surgery, in the room of Dr. RAMSAY, resigned.

*University of Maryland.*—Dr. T. H. WRIGHT has resigned the Professorship of Anatomy in the medical department of this university, and Dr. E. GEDDINGS of Charleston has been elected to fill that chair.

# QUARTERLY MEDICAL ADVERTISER.

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IN consequence of the extended circulation of the AMERICAN JOURNAL OF THE MEDICAL SCIENCES, the Proprietors intend, in compliance with the wishes of many of their Friends, to increase the facilities for advertising, hitherto possessed by it. For this purpose, a Sheet of Advertisements will be affixed to the succeeding Numbers of the Journal. All Booksellers, Medical Gentlemen, and others desirous of taking advantage of this mode of announcement, will please address their Advertisements to CAREY & LEA, Philadelphia, by the 10th day of the month preceding that of the publication of the Journal, viz. on 10th July, 10th October, 10th January, and 10th April.

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*Philadelphia, January 20, 1830.*

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## TO READERS AND CORRESPONDENTS.

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Professor MOTT's and Drs. HALL and HOPKINSON's communications will be inserted in our next. Other communications have been received, and are under consideration.

The following works have been received:—

Lithographic plate of the Cerebro-spinal Axis of Man, with the Origin and first Division of its Nerves, with explanations. From the French of M. MANEC, M. D. P. Lecturer on Anatomy and Operative Surgery, &c. at Paris. Translated and revised by J. PANCOAST, M. D. (From Mr. P. Ancora.)

A Discourse on the Epidemic Cholera Morbus of Europe and Asia; delivered as an Introductory Lecture, at the College of Physicians and Surgeons in the City of New York, Nov. 9, 1831. By JOSEPH MATHER SMITH, M. D. Professor of the Theory and Practice of Physic and Clinical Medicine. New York, 1831. (From the author.)

The Book of Analysis, or a New Method of Experience, whereby the induction of the Novum Organon is made easy of application to Medicine, Physiology, Meteorology, and Natural History; to Statistics, Political Economy, Metaphysics, and the more complex departments of Knowledge. By TWEEDEY JOHN TOWN, M. D. of the Royal College of Physicians of London, &c. &c. London, 1831. (From the author.)

Papers relative to the disease called Cholera Spasmodica in India, now prevailing in the North of Europe. Printed by authority of the Lords of his Majesty's most honourable Privy Council. London, 1831. (From Dr. James Clark.)

H. M. J. DESRUELLES Doctor's der Medicin, Wundarzte am Militairhospitale für den Unterricht zu Val-de-Grace, Mitgleides der Medicin. Nacheiferungsgesellschaft zu Paris, der Societät der Wissenschaften, des Ackerbaues und der Künste zu Lille, zu Metz und Rennes, Abhandlung über den Keichhusten nach den Grundsätzen der physiologischen Lehre verfasst. Eine von der medicin. praktischen Gesellschaft zu Paris am 26. August 1826 gekrönte Schrift. Aus dem Französischen übersetzt und mit Anmerkungen begleitet von GERHARD VON DEM BUSCH, Doctor der Medicin und Chirurgie, ausübendem Arzte zu Bremen, der medicinisch-chirurgischen Gesellschaft zu Philadelphia, der Gesellschaft schwedischer Arzte zu Stockholm, und der Jenner'schen Gesellschaft zu London Ehrenmitglieder und Mitglieder. (From Dr. Busch.)

Der epidemische Brechdurchfall, beobachtet zu Nishni-Nowgorod, von J. G. Lindgren, Dr. Med. (From Dr. Busch.)

Medicinisch-Chirurgische Zeitung, for April and May, 1831. (From Dr. Von dem Busch.)

Journal der Chirurgie und Augen-Heilkunde. Herausgegeben von C. F.

V. GRAEFE and PH. V. WALTHER. Band XIV, Heft 4, und Band XV, Heft 1, 2, and 4. (In exchange.)

Heidelberger Klinische Annalen. Band VII. Heft 1 and 2. (In exchange.)

Litterarische Annalen der gesammten Heilkunde. Herausgegeben von J. F. C. HECKER. December, 1830, and January, February, March, April, May, and June, 1831. (In exchange.)

Bibliothek for Læger, for 1830, and No. 1. for 1831. (In exchange.)

Archives Générales de Médecine, for August, September, and October, 1831. (In exchange.)

Annales de la Médecine Physiologique, for June and July, 1831. (In exchange.)

Transactions Médicales, for August and October, 1831. (In exchange.)

Revue Médicale, for August, September, and October, 1831. (In exchange.)

Journal de Chimie Médicale, de Pharmacie, et de Toxicologie, for September, October, and November, 1831. (In exchange.)

Journal Hebdomadaire, for August, September, and October, 1831. (In exchange.)

Gazette Médicale, for September, October, and November, 1831. (In exchange.)

Bulletin des Sciences Médicales, February, March, 1831. (In exchange.)

The London Medical and Surgical Journal, for September and October, 1831. (In exchange.)

The London Medical and Physical Journal, for September and October, 1831. (In exchange.)

The Medico-Chirurgical Review, for October, 1831. (In exchange.)

The London Medical Gazette, for September, 1831. (In exchange.)

For the gratification of our contributors, we present references to the works, received during the last three months, in which their communications are noticed.

Professor PRYSICK'S Case of Obstinate Cough cured by Excision of the Uvula, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor CHAPMAN'S Thoughts on the Pathology of Icterus, his Anomalous Cases of Dropsy, his Remarks on the influence of Mercury in the production of Liver Complaints, and his Observations on the use of Tobacco in Croup, are noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor DEWEES'S paper on Ergot, is noticed in the Medicinisch-Chirurgische Zeitung, for May last.

Professor MOTT'S Case of Ligature of the Carotid for Aneurism of the Arteria Innominata, is noticed in the Bibliothek for Læger, No. 3, 1830; his Case showing the State of the Circulation of the Head after one Carotid is tied, and his Case of Axillary Aneurism, are noticed in the Archives Générales, for Oc-

tober last; and his Case of Ligature of the Common Iliac, is noticed in the *Medicinish-Chirurgische Zeitung*, for May last.

Professor HONNER's Case of Ozena is copied in the *Bulletin des Sciences Médicales*, for February last; his Experiments on the Mucous Membranes, and his Observations on some points of Pathology, are noticed in the *Medicinish-Chirurgische Zeitung*, for May last.

Professor MUSSEY's Case of Aneurism by Anastomosis, is noticed in the *Bulletin des Sciences Médicales*, for February last, and in the *Bibliothek for Læger*, No. 3, 1830.

Dr. JACKSON's Alms-house Reports are noticed in the *Medicinish-Chirurgische Zeitung*, for May last.

Dr. JACKSON's paper on Rhubarb in Hæmorrhoids, is noticed in the *Bulletin des Sciences Médicales*, for February last; and his Observations on Mercurial Inhalations, are noticed in the *Medicinish-Chirurgische Zeitung*, for May last.

Dr. RANDOLPH's Case of Amputation of the Lower Jaw, is noticed in the *Bibliothek for Læger*, Nos. 2 and 4, 1830.

Dr. MITCHELL's memoir on Rheumatism, is noticed in the *London Medical and Physical Journal* and *London Medical and Surgical Journal*, for September last, and in the *London Medical Gazette*, for October last.

Dr. PEIRCE's Case of Cancer is noticed in the *London Medical and Surgical Journal*, for September last.

Dr. LEHMAN's Case of Spontaneous Luxation of Humerus, is noticed in the *Bibliothek for Læger*, No. 2, 1830, and in the *Medicinish-Chirurgische Zeitung*, for May last.

Dr. FARNSTOCK's Remarks on the use of *Rhus Glabrum* in Mercurial Salivation, are noticed in the *Bibliothek for Læger*, No. 2, 1830; and his Observations on the use of Compound Tincture of Benzoin in Burns, are noticed in the *Bulletin des Sciences Médicales*, for February last.

Dr. GAYLORD's Case of Intussusception is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. STRACHAN's Case of Extirpation of Scirrhus Cervix Uteri, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. SYMONS's Case of Fungous Hæmatodes cured by Pyroligneous Acid, is copied in *Græfe and Walther's Journal*, No. 4, Vol. XIV.

Dr. WARE's Case of Sea-sickness, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. MOORE's Case of United Twins, is noticed in the *Bibliothek for Læger*, No. 3, 1830.

Dr. HENDERSON's Case of Diseased Bones cured by Arsenic, is noticed in the *Bulletin des Sciences Médicales*, for February last.

Dr. FAUST's Observations on Endosmose and Exosmose, are noticed in the *Bulletin des Sciences Médicales*, for March last.



Dr. EMERSON'S Medical Statistics of Philadelphia, are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. WHITE'S Case of Ligature of the Internal Iliac, is noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. IVES'S Case of Poisoning by Cantharides, is noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. HOSACK'S Remarks on the various methods employed for the Removal of the Tonsils, are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. WASHINGTON'S Case of Gun-shot Wound, Dr. MOORE'S Remarks on the efficacy of Volatile Alkali in cases of Snake bites, Dr. MOULTRIE'S Observations on the Lymph, Dr. PENBLETON'S paper on Superfœtation, and Dr. COX'S article on the Use of the Capsulæ Renales, are noticed in the *Medicinisch-Chirurgische Zeitung*, for May last.

Dr. GREEN'S Cases of Fractured Liver are noticed in the *Bibliothek for Læger*, N<sup>o</sup>. 3, 1830.

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CARTER & LEA, Philadelphia, for the Editor of the American Journal of the Medical Sciences," or may be deposited with Professor J. C. WARREN, M. D. Boston—C. DRAKE, M. D. New York, or Professor S. H. DICKSON, M. D. Charleston, S. C.

All letters on the *business* of the Journal to be addressed exclusively to the publishers.

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Sketches of the most Prevalent Diseases of India; comprising a Treatise on the Epidemic Cholera of the East, &c. &c. By James Annesley, Esq. Madras Medical Establishment, &c. &c. &c. Second edition, London, 1831. With a map.	
Treatise on Cholera Asphyxia or Epidemic Cholera, as it appeared in Asia, and more recently in Europe. By George Hamilton Bell, Fellow of the Royal College of Surgeons, Edinburgh, late Residency Surgeon, Tanjore. Edinburgh and London, 1831, pp. 150, 8vo. With a map.	
A History of the Contagious Cholera, with Facts explanatory of its Origin and Laws, and a Rational Method of Cure. By James Kennedy, Member of the Royal College of Surgeons. London, pp. 291. With two maps.	
Quelques Réflexions sur le Choléra Morbus. Par le Dr. Jaehnichen, Membre du Conseil temporaire de Medecine de Moscou. Moscow, 1831.	
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## UNIVERSITY OF MARYLAND.

At a public commencement held in the University of Maryland on the 19th of March, 1832, the following gentlemen were admitted to the Degree of Doctor of Medicine.

- Henry Skinner*, of Maryland, on Cynanche Trachealis.
- William M. Stone*, of Maryland, on De Colico.
- Washington Dorsey*, of Maryland, on Diabetes Mellitus.
- Alexander S. Hawkins*, of Maryland, on Malaria.
- William H. Farrow*, of Maryland, on Phlegmasia Alba Dolens.
- Thomas Feinour*, of Maryland, on Epilepsy.
- Cecilius B. Calvert*, of Maryland, on Fever.
- Joseph Ford*, of Maryland, on Cholera Infantum.
- William A. Seldon*, of Virginia, on Phlebitis.
- Walker Jones*, of Virginia, on Hepatitis.
- Lewis W. Foulke*, of Pennsylvania, on Injuries of the Head.
- William T. Leonard*, of Maryland, on Phlegmasia Dolens.
- Samuel Higgins*, of Maryland, on Fever.
- Philip N. Norris*, of Virginia, on Dislocations.
- John H. Skinner*, of Maryland, on Decarbonization of blood.
- Richard W. Bowie*, of Maryland, on Congestive Bilious fever.
- John H. T. Cockey*, of Maryland, on Morbid consequences of loss of blood.
- Robert P. Magruder*, of Maryland, on Yellow Fever.
- John H. Riggs*, of Maryland, on Pathology of Intermittent Fever.
- James W. Waters*, of Maryland, on Cynanche Tonsillaris.
- Thomas C. Kirk*, of Maryland, on Chorea Sancti Viti.
- John Evans*, of Maryland, on Dysentery.
- James B. M'Kee*, of Maryland, on De Mentis effectibus.
- James S. Naudain*, of Delaware, on Hypochondriasis.
- Nathan Hussey*, of Maryland, on Dysentery.
- Philip Kephart*, of Maryland, on Nature and operation of Kine Pock.
- Garret Abruter*, of Maryland, on Puerperal Fever.
- Henry W. Houston*, of Delaware, on Malaria.
- James T. N. Muddox*, of Maryland, on Delirium Tremens.
- Samuel M'Pherson*, of Maryland, on Asphyxia.
- Samuel Weisel*, of Maryland, on Hernia Inguinalis.
- Robert A. Nelson*, of Virginia, on Hysteria.
- Leonard C. M'Phail*, of Maryland, on Variola.
- John F. Petherbridge*, of Maryland, on Modus operandi and Therapeutic application of Cathartics.
- John W. Butler*, of Louisiana, on Blood-letting.
- Theodore Jenkins*, of Maryland, on Congestive Theory of Asthma.
- Henry N. Martin*, of Maryland, on Nature and treatment of Gun Shot wounds.
- Joseph Howard*, of Maryland, on Delirium Tremens.
- Edward D. Gazzam*, of Pennsylvania, on Puerperal Peritonitis.
- Samuel H. Birckhead*, of Maryland, on Asthma.
- Francis W. G. Thomas*, of Virginia, on Bilious Fever.
- William Beadles*, of Virginia, on Diarrhoea.
- Lake Robinson*, of Maryland, on Intermittent Fever.
- Presley Nelms*, of Virginia, on Pneumonia Biliosa.
- Daniel H. Lawrence*, of Maryland, on Inflammation.
- Hyllary P. Mudd*, of Maryland, on Dysentery.
- Robert Otway Blakey*, of Virginia, on Dysentery.
- Bernard J. Miller*, of District of Columbia, on Cancer.
- Reuben T. Gray*, of South Carolina, on Anasarca.
- Junius C. Dunbibin*, of North Carolina, on Hepatitis.



*George W. Crum*, of Maryland, on Pneumonia Biliosa.

*Thomas A. Davis*, of Maryland, on Dysentery.

\* *Robert C. Hall*, of Maryland, on De Hepatitis.

*James G. Brehon*, of North Carolina, on Hæmoptoe.

*James T. Hargraves*, of Maryland, on Cynanche Tracheali.

*John C. Polk*, of Maryland, on Yellow Fever.

*William T. Brent*, of Maryland, on Tetanus.

*Benjamin C. Snyder*, of Maryland, on Nephritis.

*Alexander C. Robinson*, of Maryland, on Vegetable Physiology.

*William N. Baker*, of Maryland, on Sympathetic Nerve.

*Presley N. Williams*, of District of Columbia, on Cause of Fever.

N. POTTER, *Dean*

\* The Medal for the Dissertation best written in Latin, was adjudged to this gentleman.

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*Philadelphia, March 21st, 1832.*

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## JOURNAL

OF THE

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This Journal is devoted to the objects of Pharmaceutic Research, viz. Chemistry, (General and Pharmaceutic,) Materia Medica, Zoology, Botany, Mineralogy, &c. &c. Intended for the benefit of the Apothecary, it merits his patronage and support.

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- THOMAS H. WRIGHT, M. D. *Physician to the Baltimore Alms-House Infirmary.*



## TO READERS AND CORRESPONDENTS.

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The illness of the Editor has prevented his completing an elaborate review he was preparing, of the various works on the symptoms, pathology and treatment of cholera. Should his health permit the early completion of the review, it will be published in anticipation of the next number of the Journal.

The following works have been received:—

Transactions of the Medical and Physical Society of Calcutta, Vol. V. (From the Society.)

Physiological Pyretology; or a Treatise on Fevers; according to the Principles of the New Medical Doctrine. By F. G. BOISSEAU, M. D. P. &c. &c. Translated from the Fourth French Edition. By J. R. KNOX, M. D. Carey & Lea, 1832. (From the publishers.)

Report of the College of Physicians of Philadelphia, to the Board of Health on Epidemic Cholera. (From J. BELL, M. D.)

Library of Practical Medicine. Published by Order of the Massachusetts Medical Society for the Use of its Fellows. Vol. II. Containing Principles of Surgery. By JOHN PEARSON, F. R. S. and Surgical Observations on the Constitution, Origin, and Treatment of Local Diseases, and on Aneurisms. By JOHN ABERNETHY, F. R. S. Boston, 1832. (From the Society.)

A Full Account of the Operation of Injecting the Veins with Aqueous and Saline Liquids, for the Cure of Malignant Cholera, in the most Hopeless Cases. From the London Lancet. New York. Peter Hill. (From the publisher.)

A Manual of Surgery, founded upon the Principles and Practice lately taught by Sir ASTLEY COOPER, Bart. F. R. S. &c. &c. and J. H. GREEN, Esq. F. R. S. &c. &c. Third edition, considerably enlarged, containing many additional notes from the writings of other distinguished surgeons. Edited by THOMAS CASTLE, F. L. S. of Queen's College, Oxford, &c. &c. Boston, Monroe & Francis. New York, C. S. Francis. (From the publishers.)

A Treatise on Puerperal Peritonitis. By A. C. BAUDELOQUE, M. D. &c. &c. to which was awarded the Prize by the Royal Society of Medicine of Bordeaux. Translated from the French. By G. S. BEDFORD, M. D. Lecturer on Obstetrics, &c. New York, 1831. (From the translator.)

A Treatise on Cholera Morbus; or Researches on the Symptoms, Nature, and Treatment of this Disease; and on the different Means of avoiding it. By F. G. BOISSEAU, Professor in the Military Hospital of Metz, &c. &c. Translated from the French, by G. S. BEDFORD, M. D. Lecturer on Obstetrics, &c. New York, 1832. (From the translator.)

An Eulogy on the late JAMES M. PENDLETON, M. D. Delivered by appointment of the New York City and County Medical Society, in the Hall of Colum-

*bia College.* By G. S. BEDFORD, M. D. &c. &c. New York, 1832. (From the author.)

The Physician's first steps in Professional Life: an Address delivered at the Medical Commencement in Washington, March 7th, 1832. By THOMAS HENDERSON, M. D. Professor of the Theory and Practice of Medicine. Washington, 1832. (From the author.)

Practical Essays on Medical Education and the Medical Profession in the United States. By DANIEL DRAKE, M. D. Professor in the Medical College of Ohio. (From the author.)

A Practical Treatise on the History, Prevention, and Treatment of Epidemic Cholera, designed both for the Profession and the People. By DANIEL DRAKE, M. D. Cincinnati. Corey and Fairbank, 1832.

The Principles of Midwifery: including the Diseases of Women and Children. By JONAS BURNS, M. D. &c. From the Seventh London Edition, revised and enlarged; with Improvements and Notes, by T. C. JAMES, M. D. Professor of Midwifery in the University of Pennsylvania. C. S. Francis, New York, and Monroe & Francis, Boston, 1831. (From the publishers.)

Opinion upon the Epidemic Cholera Morbus observed at Warsaw. By Dr. O. A. BINAULT. Translated from the Italian. By WM. SAMSON, Esq. New York, Peter Hill. (From the author.)

Tractatus Anatomico-Pathologicus systema duas observationes rarissimas de formatione fibrarum muscularium in pericardio atque in Pleura obviarum, quem consensu gratiosi medicorum Heidelbergensium ordinis publico examini submittit GEORGIVS LEO-WOLF, Hamburgensis, Med. Chirurg. atque artis obstet. doct. Tab. 4. (From the author.)

De morbo qui lesiones in cadaveribus dissecandis haud raro sequi solet. Dissertation inauguralis medica. Auctor MAURITIUS LEO-WOLF, Hamburgensis, M. D. (From the author.)

Archives Générales de Médecine, January, February, March, and April, 1832. (In exchange.)

Gazette Medicale de Paris, February, March, and April, 1832. (In exchange.)

Revue Médicale, January, February, and March, 1832. (In exchange.)

Bulletin des Sciences Médicales, September, and October, 1831. (In exchange.)

Transactions Médicales, February, and March, 1832. (In exchange.)

Journal Universel et Hebdomadaire, February, March, and April. (In exchange.)

Memorial Encyclopédique et Progressive des Connaissances Humaines, January, February, and March, 1832. (In exchange.)

Annales de la Médecine Physiologique, November, 1831. (In exchange.)

Journal de Chimie Médicale, April, 1832. (In exchange.)

Bibliothek for Læger, Redegeret af dens Medlem. G. OTTO, M. D. No 1 and 2, 1832.

Edinburgh Medical and Surgical Journal, for April, 1832. (In exchange.)

London Medical Gazette, for February, March, April, and May, 1832. (In exchange.)

London Medical and Surgical Journal, for December, 1831, and January, February, March, April and May, 1832. (In exchange.)

London Medical and Physical Journal, for May and June, 1832. (In exchange.)

The Journal of the Royal Institution of Great Britain, for December, 1831. (In exchange.)

The Transylvania Journal of Medicine and the Associate Sciences. Vol. V. No. 1, 1832. (In exchange.)

The Boston Medical and Surgical Journal, Vol. VI. (In exchange.)

The Western Journal of the Medical and Physical Sciences, for April, 1832. (In exchange.)

The New York Medico-Chirurgical Bulletin, for February, March and April, 1832. (In exchange.)

Authors of new medical books, desirous of having them reviewed or noticed in this Journal at the earliest opportunity, are invited to transmit to the *Editor* a copy as soon after publication as convenient, when they will receive prompt attention. Under ordinary circumstances, very considerable delay is caused by the circuitous routes through which they are received.

Papers intended for publication, should be sent, *free of expense*, as early after the appearance of the Journal as possible, in order to be in time for the ensuing number. Such communications should be addressed to "CAREY & LEA, Philadelphia, for the Editor of the American Journal of the Medical Sciences."

All letters on the *business* of the Journal to be addressed exclusively to the publishers.





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XIII. Geschichtliche Darstellung des ausbruchs der Asiatischen Cholera in Hamburg. Nach Acten und Amtlich angestellten untersuchungen. Von J. C. G. Fricke, Dr. Hamburg, 1831. 8vo. pp. 92.	
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THE  
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ART. I. *Remarks on Spinal Irritation as Connected with Nervous Diseases; with Cases.* By ISAAC PARRISH, M. D.

IN some late investigations on the obscure subject of nervous pathology, instituted by several eminent practitioners of Great Britain, an opinion has been advanced, and urged with considerable authority, that many chronic nervous disorders have a local and determinate seat in some portion of the spinal marrow or great sympathetic ganglia, and hence that these obstinate diseases are most effectually treated by applications directed to the spinal column.

I propose, in the present paper, briefly to notice some of the facts and arguments upon which this conclusion is founded, together with the pathological principles which it involves, and their application to the diagnosis and treatment of this extensive and obscure class of diseases. I shall then endeavour to illustrate the several points embraced in the inquiry by narrating cases, most of which have fallen under my own observation while fulfilling the duties of resident student in the Philadelphia Almshouse Infirmary.

In adverting to the obvious and acknowledged ignorance which prevails in relation to the nature of most maladies, which are supposed to reside solely in the nervous apparatus, and in considering the immense amount of moral and physical distress which they produce, every one must most seriously desire the establishment of some definite principles on which their treatment may be conducted.

Believing that the present vague and unintelligible notions on the pathology of neuralgic diseases, have arisen from the obscurity in which the normal functions of the nervous system have always been involved, it may be proper briefly to advert to late physiological dis-



coveries, which may admit of an important application in elucidating pathological phenomena.

It is only within a few years that the united efforts of BICHAT, BELL, MAGENDIE, RIEL, PHILIP, and others, aided by experimental inquiry, and enlightened discrimination, have amassed a body of facts, the development of which has dispelled much former obscurity, and promise, if still pursued, to lead to most interesting results.

These authors have taught us to consider the nervous system not as a homogeneous tissue, possessing an identity of structure and function, and having for its only centre the *brain*, (an opinion for a long time entertained,) but as composed of separate parts, differing essentially from each other, both in their functional actions, and anatomical characters. Thus, to the brain and the nerves proceeding from it, have been assigned one set of actions; to the spinal marrow and its branches another; and to the sympathetic nerve and its tributaries a third.

Adopting this division as the basis of all correct pathological deductions, it is to be hoped that future investigations on the nature and seat of many nervous affections will assume a much more certain and satisfactory form. The credit of first commencing such a series of observations in reference to neuralgic diseases, is perhaps due to the English practitioners alluded to; the observations upon which their deductions are founded, I shall endeavour summarily to state.

In the year 1821 a short essay was published by Dr. R. P. PLAYER, in which he called the attention of the profession to a connexion between spinal disease and neuralgic symptoms manifested in different portions of the body; this fact he was enabled to state from having for several years observed that tenderness on pressure over the spinal column, in a situation corresponding to the origin of the diseased nervous cords, was almost uniformly present; he further stated that he had long been accustomed to treat such cases by topical applications over the tender portion of the column, and that the uniform success of this practice had confirmed him in the opinion that the cases alluded to had their origin in the spinal marrow.

The essay of Dr. Player excited but little attention until the year 1828, when his views were abundantly confirmed by Dr. BROWN, of Glasgow, in a paper which he published on "irritation of the spinal nerves." During the next year, in a highly instructive essay, entitled "observations on some forms of spinal and cerebral irritation," similar opinions were advanced by Dr. DARWALL, who was followed by Drs. TEALE and TATE, the former in a treatise on neuralgia, pub-

lished in 1830, and the latter in a work on hysteria, which appeared about the same time.

\* All these authors have insisted on the fact, that tenderness on pressure over some portion of the spinal column, is an attendant and prominent symptom in most chronic nervous complaints, and that a removal of this tenderness by appropriate external applications, constitutes the most important indication in the treatment of the accompanying nervous symptoms. For the truth of this assertion each author appeals to his own experience, and enforces the opinion by many well selected cases; all of which is considered by Teale as sufficiently conclusive to establish the following pathological axiom, viz. "that disease in the large nervous masses, as the brain and spinal marrow, is not so much evinced by phenomena in the immediate seat of the irritation, as in those remote parts to which the nerves arising from the diseased portion are distributed." This principle is supposed to be applicable to a very extensive class of nervous affections, all of which Dr Teale has proposed to designate by the general term of neuralgia, comprehending in this view not only those manifest affections of the nervous filaments characterized by pain, but many other conditions indicating an altered and perverted state of their healthy actions.

In thus assigning to this numerous and perplexing catalogue of diseases, a local and uniform situation, we are still uninformed as to the precise pathological condition which originates them, nor has it been explained in what manner tenderness on pressure should reveal the condition of parts, so firmly secured by bony and ligamentous attachments; if the fact be established, however, it is reasonable to infer the existence of some morbid condition, which, in the present uncertainty of our knowledge, may perhaps be appropriately designated by the term spinal irritation, or, as the same idea has been differently expressed, by "functional disorder of the spinal marrow."

If the preceding physiological and pathological views be correct, a most important change will be effected in the classification, diagnosis and treatment of the various modifications of disordered nervous action so frequently presented to the practitioner. These affections now designated by numerous unmeaning appellations, and described with nosological minuteness, will be comprehended under one general division, be distinguished by a few well-marked and prominent symptoms, and treated on plain and comparatively certain principles.

Considering the spinal marrow as the great centre for sensation and motion, the materials of which it distributes through its com-

pound nerves to those parts subservient to the will, we should expect to witness various spasmodic or painful affections of the voluntary muscles, occurring as a consequence of its primary or secondary disorder. Believing with the distinguished Sir CHARLES BELL that the fifth nerve possesses an identity of structure and function with the spinal nerves, though arising in the most superior portion of the column, irritation at its root would account for various perplexing irregularities in the sensations and movements of some of the muscles of the face to which it is so liberally supplied. Applying the same train of reasoning to similar affections of other portions of the economy dependent for their nervous power on the same great centre, we should expect to find them equally intelligible.

A still more important light in which the principle now under consideration may be examined, is in connexion with the intricate morbid actions, presumed to occur in the ganglionic system. Contemplating the sympathetic ganglia as the seat of the nervous influence by which the functions of the internal and vital organs are sustained—as presiding over the movements of the involuntary muscles—as exercising an obvious though inexplicable agency over the process of secretion, and the circulation of the vital fluid—we may hope in the progress of inquiry for the development of facts, that will dispel some of the obscurity at least, which is connected with a very extensive class of chronic functional disorders of internal organs, which, from their recondite nature, have defied the rigid scrutiny of the most renowned and successful cultivators of our science. The existence of spinal irritation in the diseases I have adverted to, is supposed to be evinced by spinal tenderness; this symptom being not only indicative of irritation in the spinal marrow, but also in the sympathetic ganglia; an inference drawn from the well ascertained anatomical connexions and physiological relations existing between these great centres.

Before adopting to the full extent the preceding opinions, it may be well to inquire, whether it is not possible for the trunks of nerves to be obviously and even violently affected with disease, without their centres or points of origin being in any degree implicated? It is to be regretted that this question has not been more critically examined by the several writers on spinal irritation, particularly as its consideration is so intimately associated with the adoption of their peculiar opinions. Dr. Darwall dismisses it by remarking that we have no evidence of the existence of diseases in the trunks independent of the centres, while he conceives that there is convincing proof of irritation in the centres giving rise to morbid influences in the parts which they



respectively supply. If tenderness on pressure be alone indicative of irritation in the spinal marrow or sympathetic ganglia, (and as far as I am aware this alone is to be relied on,) I am compelled to dissent from the proposition of Dr. Darwall, having witnessed several cases of neuralgia characterized by most unequivocal symptoms, in which on the most careful and repeated examinations, no tenderness could be discovered, and similar cases have been mentioned to me by physicians of accurate and extensive observation. Such occurrences should create caution in the exclusive adoption of opinions, though they may be sanctioned by the general tenor of observation.

Irritation of the nervous centres with their accompanying symptoms, may either occur, as an idiopathic affection, or may arise from a previous derangement in the functions of some organ or organs; thus an irritation may be primarily induced in the dental, gastric, or uterine surfaces, which by its continuance will be extended to the nervous masses, and thence be transmitted to distant parts; this position is exemplified by the fact of a decayed tooth being the cause of the most severe and protracted nervous complaints; or by referring to the complicated and distressing affections, passing under the names of hypochondriasis, melancholia, &c. which have obviously depended on a perverted action of the mucous surface of the alimentary canal; or by adverting to the anomalous and protean forms of disorder in young females lately so accurately traced to uterine irritation. The practical importance of this distinction between idiopathic and symptomatic spinal irritation will be more particularly noticed hereafter.

Before proceeding further, it may be proper to advert to some late highly interesting observations on the *peculiar* neuralgic affections of females, as described by Dr. Tate of London; this gentleman after an enlarged experience, has not hesitated to publish the opinion, that the appalling and anomalous symptoms presented in the hysterical female, are all capable of being referred to an irritation existing in some portion of the spinal marrow, originally induced by a disordered condition of the uterine function. He was led to this conclusion by observing, that tenderness on pressure over the spinal column, was a uniform attendant and characteristic feature of these complaints, connected almost uniformly with *pain under the left breast*, and palpitation of the heart. These four symptoms, viz. disordered menstruation—spinal tenderness, most generally evident over the upper dorsal vertebræ—pain under the left mamma, and sometimes under the right—and palpitation of the heart, may be distinguished among a multitude of frightful appearances in almost all cases of chronic nervous disorder.

der in young females, and when they are conspicuous Dr. Tate considers them as characterizing a peculiar and distinct disease, which, to avoid confusion, he has proposed to call hysteria.

Without entering into a detail of the process by which Dr. Tate has arrived at this conclusion, I shall merely state the result of my own observations in reference to his peculiar opinions.

While practising in the Alms-house, I had frequent opportunities of examining cases similar to those described by Tate; some of these were of long duration, and of most intractable character; in all of them my attention was directed to the discovery of these symptoms, which I have almost invariably found to be prominent features in the case; the pain under the left breast is particularly striking, and should alone lead us to suspect the character of the case. The importance of establishing a few diagnostic symptoms, whereby these perplexing cases may be recognised, is sufficiently obvious. More enlarged experience must determine whether those mentioned by Dr. Tate are to be relied on.

By reviewing the preceding observations, it will be perceived that, (according to late writers on spinal irritation, an outline of whose opinions I have attempted to present,) by a disorder in the normal actions of some portion or the whole of the spinal marrow and sympathetic ganglia, either occurring primarily or induced by some pre-existing irritation, symptoms are manifested in different tissues, producing diseases distinguished by numerous appellations, though usually described by nosologists under the class neuroses; and further, that all these complaints are susceptible of being reduced to the two terms of neuralgia and hysteria, the former being applicable to them as occurring in males, and the latter in females.

The introduction of such a system of generalization is, indeed, a bold innovation upon general usage, and established authorities. while its adoption, founded on the firm basis of fact and observation, would form a very important epoch in the history of practical medicine; it has, however, yet to undergo the ordeal of a sound and discriminating experience.

There is still another light in which morbid derangements of the nervous centres may be viewed with peculiar interest, viz. in connexion with the complicated symptoms of fever.

• When we contemplate the wide range of sympathies, in the production of which the great sympathetic nerve is supposed to be the sole agent, and the influence which it must exercise in the production and maintenance of all general or constitutional diseases, we cannot fail to admit its great importance in pathological investigations. That

its normal functions are materially deranged in fever, no one can doubt, who reflects on its primary symptoms, paroxysmal nature, the disturbance of the circulation, the depravation of the secretions, &c. Some very interesting observations, tending to elucidate such a connexion, have lately been published by Dr. GRIFFIN, an experienced practitioner of Limerick. These observations were confined principally to cases of chronic intermittent fever, many of which fell under his care in the practice of a large public dispensary; he reports many cases, in which, being unable to effect a cure by the ordinary tonic remedies, he was induced to examine the spinal column, which was invariably found exquisitely tender in some part of its course, in relieving which, by the ordinary revulsive applications, he declares that his success has been highly satisfactory. Dr. Griffin supposes, that the spinal marrow and sympathetic nerve are simultaneously disordered in these cases, and he designates this peculiar pathological condition by the term functional disorder of the spinal marrow.

It now remains for me to indicate the principles of treatment, founded on the foregoing considerations, and the circumstances under which they may be most advantageously applied. Being called to a case, and having ascertained the existence of spinal tenderness, of general nervous derangement, &c. our inquiries should be directed to the original cause of the attack, which will usually be found to exist in some functional disturbance of one or more of the internal organs. Under such circumstances, two prominent indications are presented—first, to remove spinal tenderness; and secondly, to correct the existing disturbances in the functions of important organs. The importance of this precept is evident, for though we may remove spinal tenderness, and thus terminate for a time the neuralgic symptoms, yet if the primary irritation be suffered to continue, their renewal on the application of slight causes may be reasonably apprehended; and conversely, if by appropriate means we should correct the primary disordered action, which has, through the channel of the nervous centres, produced such general derangement, without at the same time by revulsive measures, relieving these irritated points, our efforts would be alike unavailing.

I wish particularly to notice the external applications proposed for the relief of spinal tenderness; the other part of the treatment, though equally important, admits of too many modifications as applicable to a great variety of cases, to allow me to enter into their examination—some of them may be collected from the cases mentioned hereafter.



The means chiefly relied upon for the removal of spinal tenderness, are of three kinds, viz. local depletion by cups or leeches to the affected part, blistering either prior or subsequently to local depletion, and the application of the tart. emetic, until its peculiar effects are produced. Local depletion has been strongly recommended by nearly all the authorities, and particularly by Teale, who states—that he has, by frequent cupping or leeching to the tender part, relieved the neuralgic symptoms, without the necessity of resorting to additional revulsive measures. Tate, on the contrary, discards both local depletion, and blistering—considering them quite ineffectual, and relies solely on the more powerful and permanent impression produced by the tartar emetic.

Such a diversity of opinion on so important a practical point may, at first view, appear irreconcilable, but I apprehend it may be satisfactorily explained by referring to the general character of the cases as described by these writers. In the more simple forms of neuralgia, where the spinal irritation is either an idiopathic affection, or has been induced by slight causes, and where the general system has not become seriously implicated, (conditions connected with the generality of cases noticed by Teale and several other writers,) local depletion and blistering, either alone or combined, will generally be found effectual, though in many, even of these cases, a long perseverance in this plan will be demanded.

In the hysterical forms of the complaint supposed by Dr. Tate to be originally dependent on uterine disorder, in which from the neglect, (arising perhaps from the supposed triviality of the symptoms,) the nervous functions have become deeply and generally impaired, the applications must be proportionably active, and it is under these circumstances that the tartar emetic from its powerful and permanent action is peculiarly appropriate.

In the use of this irritant, however, considerable caution should be observed, particularly if it be applied over an extensive surface; in some individuals who either from natural predisposition, or from the protracted operation of disease, have acquired a peculiarly sensitive temperament, it cannot be endured; several instances have fallen under my notice in which the most severe constitutional irritation has accompanied its use,\* and in one case a violent and alarming convulsion appeared to be produced by it: should a part of the spine be

\* I believe it will generally be found that the nervous symptoms are increased as the pustulation advances, and that they diminish as it declines.

extremely tender, as is often the case, the ointment or plaster should be applied in its vicinity; this remark will also apply to cups or blisters.

Several methods of applying the tartar emetic have been proposed; the ointment composed of tart. emet.  $\mathfrak{z}\text{ij.}$ , cerat. simp.  $\mathfrak{z}\text{j.}$  I have often found ineffectual, owing I presume to the small quantity of the active ingredient in its composition—the plaster made by sprinkling the crystals on common sticking plaster softened by heat, is perhaps the best mode of application. In the employment of either of these modes, I have found a great difference in its action upon individuals, in some patients an eruption may be induced in twenty-four hours, while in others several days are required to produce a similar effect. The pustules are generally so painful, as to require that mild opiates should be occasionally administered during their course; should the irritation threaten serious consequences, soothing applications should be resorted to. I have found the mucilage of slippery elm, to be particularly useful.

Where the case is not sufficiently severe to justify the employment of either of the preceding applications, or where from the suddenness of the attack, it is desirable to produce a speedy impression in the vicinity of the spinal marrow, frictions down the spine with *spt. terebinth.* either alone or diluted with some unctuous matter, or a decoction of capsicum in brandy, with other similar articles will be found highly beneficial. This practice has long been advantageously employed in the treatment of the convulsions, and other spasmodic affections of children.

Before closing these remarks on the application of revulsives to the spinal column, it may be proper to inquire, whether we are to restrict our employment of such means, to those cases only in which spinal tenderness is evident. If such a practice be applicable to all cases of “nervous disease,” and if it be proved that such cases do exist independent of an irritation in the spinal marrow, (an opinion highly probable,) the conclusion is obvious. I am disposed however to carry the application of revulsives to the spinal marrow much further, extending the practice to most chronic local disorders, where it is desirable to procure a revulsive action, as for instance, in chronic inflammation of the eye, Schneiderian membrane,\* &c. &c.

If it be true that the establishment of an irritation in one part, tends to relieve a preëxisting morbid action in another, by abstracting from it that superabundant portion of nervous influence by which its morbid processes are sustained, is it not rational to infer that the nearer such counter-irritation be applied to the great reservoirs of

nervous power, the more permanent and effectual will be its operation?

Having now endeavoured to delineate the leading features embraced in the doctrine of spinal irritation as connected with nervous or neuralgic diseases, it remains for me to narrate such cases as may tend to illustrate the several principles advanced. In doing this, I must acknowledge the kindness of several of my colleagues in the Alms-house, who have always been disposed to render me their assistance in investigating this interesting subject.

The following case presents an example of one of the most simple and ordinary forms of neuralgia, referable to irritation in the upper or cervical portion of the spinal marrow.

CASE I.—Mary Bancraft, aged about forty years, of robust frame and plethoric temperament, applied to me concerning an unpleasant complaint, which had troubled her for more than a year; her symptoms were pain and stiffness in the back of the neck, increased by revolving the head, with occasional severe shooting pains in the neck, breast and occiput, often extending down the upper extremities to the ends of the fingers and sometimes causing a complete obliteration of feeling in these parts, so that she was often unable to hold her needle, or pursue any occupation for several days; general health unimpaired, has undergone no medical treatment except being often bled, which usually afforded temporary relief.

On examining the spinal column, I found acute tenderness on pressure over the cervical vertebræ, and on firm pressure she cried out, with severe shooting pains, extending to the ends of the fingers.

March 27th.—Six cups were applied over the tender part, followed by a blister, which was kept discharging for several days; during this time the shooting pains had entirely ceased; the blister being allowed to heal, her feelings were much improved, and she could use her needle with facility. I frequently saw her after this time, and found that she remained free from her former attacks.

The following cases differ from the preceding in the neuralgic pains being in the lower extremities, and the spinal tenderness in the lower portion of the column; it will be observed, however, that in Case III. no spinal tenderness could be discovered, though the beneficial effect of applications over the origin of the affected nerves was most strikingly evinced.

CASE II.—Mary Ann Ledden, aged nineteen, of delicate, nervous temperament, admitted Dec. 4th, 1832. Her symptoms were severe



shooting pain in the lower limbs, unattended with increased heat or tumefaction in the part, and without much constitutional disturbance. She had been treated for rheumatism by the ordinary antiphlogistic measures which seemed rather to increase her sufferings. At the time I saw her she was confined to the bed, being unable to move her lower limbs, without experiencing acute pain. On examining the spinal column, I found most acute tenderness on pressure over the lower dorsal vertebræ, shooting pain through the limbs being induced by the examination. Cups were directed to the affected part, which were in a few hours followed by a blister, to be dressed with stimulating ointment. Under this treatment she improved rapidly; in a few days the blister was allowed to heal, and on the 18th, she was free from complaint.

CASE III.—Jane Beck, aged thirty-one years, was admitted into the infirmary, Sept. 17th, 1831. She stated, that about a year since, she became “irregular,” since which time she has been “nervous,” and subject to violent paroxysms of pain in the limbs, occurring with great severity at her accustomed menstrual period; during the last few weeks her complaint has been rapidly advancing, and at the time of her admission, her lower extremities were so completely powerless, that she was unable to change her position in bed without assistance. These symptoms were unaccompanied with any febrile movement, or other evidence of constitutional disorder. The spinal column was carefully examined, but no tenderness could be discovered at any point. Free depletion by cups from the lumbar region was alone directed.

18th. No change in symptoms.

19th. The cupping was repeated in the morning, and produced striking and speedy relief.

20th. Was so much improved as to be able to rise without assistance; and in a few days she recovered the accustomed use of her limbs; no return of the paralysis took place, though she suffered for several months with nervous symptoms dependent on amenorrhœa, of which she was finally relieved by a restoration of the healthy uterine functions. For a knowledge of this interesting case, I am indebted to my friend, Dr. A. S. HILL, under whose care it occurred.

For the following case I am indebted to my friend, Dr. A. A. WOODHULL.

CASE IV.—Rebecca Jones, aged fifty-one, admitted into the women's medical ward, Nov. 15th, 1831. She informed me that she

had been for a long time a sufferer from a severe shooting pain in the left thigh, which, from examination, I found to follow the course of the great ischiatic nerve. So severe was the soreness in the muscles of the thigh, as to oblige her to use a crutch in walking, and sometimes to confine her entirely—general health unimpaired—states that much has been done for her; she has been repeatedly cupped and blistered on the limb, with slight temporary relief. Spinal column acutely sensible from the lower dorsal to the last lumbar vertebra; firm pressure causing severe shooting pain down the limb. On the day of admission a blister was directed over the tender part.

17th. The blister has drawn well, and produced most striking relief. She is entirely free from her accustomed pain—blister allowed to heal.

25th. Walks about without any assistance; has had no return of pain—no spinal tenderness.

Dec. 12th. Discharged.

The effect of treatment directed to the spinal column in relieving chronic nervous pains attacking different parts, and usually designated and treated as rheumatic, is most satisfactorily evinced in the following case, which, through the kindness of my friend, Dr. Woodhull, fell under my notice during the last winter.

CASE V.—William Davies, a coloured man, aged thirty-three years, admitted into the Alms-house, Dec. 6th, 1831. Stated that for the last year, he has been confined with “rheumatism,” which has been so general and severe as to prevent him from pursuing any occupation. During the greater part of this time he has been in the Alms-house of the county in which he resided, and has there undergone a great variety of medical treatment; “has taken a great many drops of different kinds,” and has been repeatedly cupped and blistered over painful parts; had at the time of his admission several issue peas in his arm, which had been kept discharging for a long time. Notwithstanding this treatment, his disease remained stationary, on which account he was induced to come to Philadelphia. At the time of his admission into the house, he was unable to walk without great pain, and his general health was much impaired from long confinement.

The spinal column was found acutely sensible throughout its whole course, and by pressure at particular points, shooting pain was induced in the course of the nervous chords; bowels constipated; tongue furred; pulse pretty full and active. Directed a brisk cathartic to be administered in the evening; and cups to be applied from the neck to the sacrum.

27th. The medicine operated freely, and the cups had abstracted about  $\frac{3}{4}$  xii. of blood; expresses himself very much relieved, having had a longer respite from pain than at any time for the last year. Slept well during the night, and is able to move the limbs freely. With a view of more completely acting upon the disease, a blister was applied down the spine—after the operation of which, he was able to walk about, and was completely restored to his former health.

The following presents a more complicated and lengthened train of symptoms, probably dependent on an irritation, both of the spinal marrow and sympathetic ganglia.

CASE VI.—Martha Garwood, aged thirty-seven years, a valuable nurse attached to the Alms-house, was attacked during the last summer with dysentery, which assumed a chronic form, and obliged her to submit to a strict medical treatment for several months. In the autumn, the dysenteric symptoms had completely subsided, though her general health was much impaired. She was frequently attacked with severe spasmodic pains in the stomach and bowels, sometimes with dyspnœa, resembling a paroxysm of asthma, together with violent neuralgic pains in the breasts, head, shoulders, &c.; appetite and digestion impaired, tongue thickly coated, pulse feeble and frequent, catamenia regular, spirits depressed—is much emaciated, and has almost despaired of recovery—her nervous symptoms have been very violent for several weeks, and a great variety of remedies have been ineffectually employed for their relief.

Oct. 24th, 1831.—On examining the spinal column, acute tenderness on pressure was particularly obvious between the fourth and fifth dorsal vertebræ, extending in a greater or less degree to the lower part of the back; on making firm pressure at the most sensitive part, the stomach was immediately thrown into painful action.

A tartar emetic plaster was at once directed to the most sensitive part, with the use of the following combination:—R. Mass. ex. hydrarg. ʒj. ; pulv. g. opii, grs. xv. ; pulv. rad. ipecac. grs. x. ; M. ft. pill. No. xxx. u. q. s. h. Diet to be light and nutritious, and the recumbent posture to be strictly observed.

26th. A fine crop of pustules has appeared, since which, she has been greatly relieved; the countenance has assumed a cheerful expression, and she has not been troubled with any of her usual pains or spasms; tongue is cleaning; discharges more natural; appetite good.

The pills were discontinued, and the eruption allowed to decline—

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no further treatment was adopted, except to advise a careful regulation of the diet, attention to the bowels, &c.

In a few days she was attending to her accustomed duties, and has since enjoyed as good a state of health as is compatible with her arduous avocation.

**CASE VII.**—Jacob Clouts, an old resident in the Alms-house, was attacked July 13th, with violent spasmodic pain in the stomach and bowels, attended with nausea and most copious vomiting of bilious matter, with constipation of the bowels. He has been subject to similar attacks for several years, which have usually proved very obstinate, and have, on several occasions, placed his life in imminent danger; in several of these attacks which I had witnessed, the most powerful antiphlogistic and relaxing measures, (as venesection, warm bath, tartar emetic enemata, &c. &c.) had been resorted to, with a view of overcoming the spasms and constipation, without producing their ordinary effect. With a knowledge of this fact, I determined to pursue a different course. On examining the spinal column, most acute tenderness was evident between the sixth and tenth dorsal vertebræ, firm pressure producing violent pain in the stomach, with a disposition to vomit; so distressing was the sensation produced by pressure, that the patient strenuously opposed a repetition of the examination. Cups were immediately applied to the tender part; during the operation the vomiting and pain ceased, the patient became tranquil, and in a short time after the cups were removed, he fell into a refreshing sleep, which continued for several hours.

14th. Some return of pain this morning, bowels still constipated, spine tender; directed a tartar emetic plaster to the tender portion of the spine, a stimulating enema, mucilaginous diet, &c.

15th. Injection had operated freely, nausea and spasms much relieved, tartar emetic very painful.

16th. Eruption has appeared, is entirely free from pain, appetite and digestion as good as usual.

The following case of sickness of stomach occurring in a nervous female, is one of frequent occurrence, and will I think be generally found to yield to the plan here proposed, where the ordinary internal remedies have failed.

**CASE VIII.**—Debby Allibone has been troubled for several months with a complication of nervous symptoms, probably dependent on disorder of the uterine function. One of the most distressing accom-

paniments of her disease, is an irritable state of the stomach, producing frequent attacks of vomiting, an indisposition for food, &c. On visiting her in the evening I found that the irritability had been for several days unusually severe, resisting all the usual antacid remedies, together with stimulating applications to the epigastrium; the stomach was now so sensitive that she was unable to retain even a tea-spoonful of cool water; the case being obstinate, I was induced to examine the spinal column; on making firm pressure about the fourth dorsal vertebræ retching and nausea were immediately induced. Dry cupping was at once resorted to, with speedy relief, and to produce a more permanent impression, a blister was directed over the tender part. In the morning I found the sickness entirely relieved, vesication had been induced, and the patient informed me that she had taken a hearty breakfast without inconvenience.

The following case was kindly furnished by my friend, Dr. H. Bond; it is rendered peculiarly interesting on two accounts—first, from the prompt and striking relief of the remedies employed upon a remarkably obstinate and protracted disease; and secondly, from the circumstance of counter-irritants to the spinal column relieving an ophthalmia which had resisted all the usual remedies employed in such cases; does not this last circumstance afford some support to the opinion which I ventured to advance, while on the subject of counter-irritation over the spinal column, as applied to diseases generally?

CASE IX.—Sept. 11th, 1830.—I was called to see R. R. clerk in a counting-house, aged twenty-three years, of a light complexion, delicate form and highly nervous temperament, belonging to a family who have shown some tendency to mental alienation. He informed me that about five years since, he was severely affected with tic douloureux; and that he had been dyspeptic for the last two years, has tried every remedy he could hear of, twice consulted a very eminent physician, has taken four bottles of Swaim's panacea, from neither of which has he been sensible of any benefit; so much discouraged was he at the ill success attending the means employed, that he had concluded to leave the disorder to take its course; but on account of a distressing vomiting I was requested to visit him; at this time he was much emaciated, weighing about ninety pounds, which he says is thirty-five or forty pounds less than his ordinary weight.

His bowels are usually torpid, and his stomach so irritable as to

\* While taking the panacea, his gums became sore and tender, and nothing he said would convince him, that it did not contain mercury.

oblige him to live on a very spare diet; he has had also a slight cough of long continuance, attended with very little expectoration.

When I arrived at his lodgings this afternoon, I found that he had been vomiting frequently during the day, that he had experienced a slight rigor in the morning followed by fever, tongue covered with a thin white coat, mouth tender and breath offensive, head-ache confined to the left side, pain and tenderness in the epigastric region, pain in the left side about the sixth rib, some tenderness over the whole abdomen, feet cold and spirits dejected. Upon examining the spine, I found a very tender spot about the seventh dorsal vertebra, and on pressure, pain in the stomach and instant vomiting was induced. Directed pediluvium, anti-emetic mixture, and simple drinks in small quantities.

12th. Had a very restless night, having derived no very evident benefit from my prescription; the spine was again examined with a similar result as on the day preceding. I directed a plaster of anti-mon. tart. seven by two and a half inches to be applied to the spine. In the afternoon he had another slight chill and fever.

13th. Had a restless night, very little mitigation in the symptoms, except that the vomiting has ceased:—R. Sulph. quin. grs. vj.; opii pulv. gr. j. M. ft. pill. No. vj.—Take one every three hours.

14th. Plaster is acting, but not sufficiently to be removed, rested better last night, has no head-ache or sickness of the stomach, but the sight or idea of food is disgusting to him; has taken but three of the pills, having had several stools attended with griping which he attributed to them. Drink, milk and water boiled together with a small quantity of magnesia added.

15th. 9 A. M. I found him cheerful, without head-ache, and nearly free from tenderness in the epigastrium or other part of the abdomen, rested well during the night. The plaster had produced so much irritation that it was removed in the evening. To my question whether he had been able to eat any thing, he replied that he thought he had taken as much breakfast as I had, with a good relish, and without any distress, enumerating among other articles a small piece of sausage, although he had taken no animal food since April, except a small piece of boiled chicken on the 10th inst. to which he attributed the attack of vomiting.

• Take three pills daily, and rub the spine twice a day with the following liniment:—R. Ol. oliva. ℥jss.; spts. tereb. ℥vj.; ol. lavend. ℥j. M. ft. liniment.

16th. Dined yesterday and to-day on beef; he continues to have an appetite which he indulges moderately with impunity. Tongue is



clean, the breath has lost its offensiveness, and the mouth much of its tenderness, bowels soluble, no return of chills, continue the liniment and take one of the following pills three times a day:—R. Sulph. quin. grs. xij.; aloes, grs. x.; opii pulv. grs. ij.; M. ft. pill. No. xij.

20th. His appetite continues good, and since the 15th nothing which he has eaten has oppressed him; tongue clean; bowels regular; no tenderness on examining the spine; is now complaining of ophthalmia, chiefly confined to the tarsus. The inflammation appeared to commence in the lids and extend to the ball, and in several days a considerable ulcer was discoverable on the cornea, equal in size to the section of a pea. This continued without any sensible improvement until the 5th of December; from the 20th of September to that time, I used every remedy that had any reputation in such cases—repeated venesection, leeching, and scarification in the early stage; blisters, caustic, purgatives, low diet, anodynes, mercury, collyria, ointments, &c. &c. and all with very little benefit; the pain in the head and breast accompanied the inflammation of the eye.

December 5th.—I directed in the evening empl. tart. antimon. ten by two and a half inches, to be applied to the upper part of the spine. On the morning of the 7th, when the plaster began to draw, there was a very evident improvement in the eye. The plaster was removed on the 8th, as sufficient pustulation was produced. I find the following language in my minutes of that date. There is a truly astonishing change in the aspect and feelings of the eye since the plaster began to take effect; the redness has almost entirely disappeared; dimness is diminishing; much greater tolerance of light; and the ulcer is healing most rapidly.

December 14th.—The eye has continued to improve; the dimness diminishing, and every unpleasant sensation having left it.

But within three days his appetite and strength have begun to fail, and the symptoms which afflicted him during the summer show a disposition to return. By the use of empl. tart. antimon. and other means, he was, however, so far recovered that I discontinued my visits early in January.

Another case of disease in the organ of vision fell under my notice in the Alms-house, in which counter-irritation to the upper portion of the spinal column appeared to afford relief, while similar applications in the immediate vicinity of the eye had proved unavailing.

CASE X.—Jasper Moylan, seaman, aged forty-three years, was admitted into the eye ward, November 7th, 1830. He was at this time labouring under a dimness of vision, amounting almost to total blind-

ness, which came on suddenly after sleeping with his face toward the sun on the deck of a vessel. The case was pronounced gutta serena, and he was repeatedly blistered to the temples and behind the ears, and moxas had been applied in the same situations, though with but little benefit to his disease. In the early part of March he fell under my care; at this time his sight was so defective that he was unable to distinguish any object clearly; the tongue was foul; bowels constipated. He was at once directed to take of mass. hydrarg. grs. v.; one pill every other night, with a gentle laxative in the morning, and a blister was applied large enough to cover the cervical vertebræ. On visiting him about twelve hours after the application of the blister, I could perceive a favourable change in his vision. The alterative treatment was continued, and the blister directed to be kept discharging.

Under this plan the sight improved rapidly, so that in a few days he could discern the figures on the yard clock, twenty or thirty yards distant from the ward; the tongue became clean, and the bowels regular.

The blister was kept discharging for several weeks, and his system invigorated by mild tonics, exercise, &c.

*April 8th.*—Was discharged, enjoying his vision as perfect as ordinarily. I neglected to notice in this case the condition of the iris.

It may be proper to remark in this place the connexion between spinal irritation and the nervous affections of the respiratory apparatus, characterized by their spasmodic nature, and the absence of the usual evidences of inflammation, or other organic derangement, as pertussis, spasmodic cough, asthuma, &c. &c.

Tenderness in the upper portion of the column is alleged by some recent authors to be a uniform attendant on these obstinate complaints, and hence they have recommended the frequent employment of local depletion, blistering, &c. to the back of the neck, as the most rational and successful mode of treating them. How far such a conclusion may be supported by facts, my own observation will not enable me to determine. Though I have seen several cases of this description materially relieved by applications addressed to the part proposed. A very interesting case was related to me by Dr. JACKSON, which offers strong support to the efficacy of such a practice; and should serve to direct our attention to an examination of the spinal column in doubtful or obstinate cases.

The patient was a young lady of delicate constitution and nervous temperament, who came under the care of Dr. JACKSON during the last summer. He was informed that she had been troubled for the

last year with a dry, hacking cough, attended with dyspeptic and nervous symptoms: she was now much emaciated, and supposed by her friends to be in a confirmed consumption. The doctor was unable to discover any organic disease of the lungs, and directed some palliatives, an attention to the use of air and exercise, &c. Finding in the course of a few weeks that the symptoms became still more alarming, and not being able to discover the cause, he was induced to examine the spinal column; acute tenderness on pressure was evident from the lower cervical to the middle dorsal vertebra. The part was several times cupped, with relief to the cough and other symptoms, after which the tartar emetic eruption was induced.

While the process of pustulation was advancing, the sufferings of the patient were greatly augmented; as it declined, however, the cough ceased, the appetite became good, the general health and spirits were surprisingly improved, and in a few weeks the patient was perfectly restored to health. But little medicine was administered internally throughout the treatment; she was directed to assume the recumbent posture while the tartar emetic was acting.

**HYSTERIA.**—The two following cases have been selected from among many others of a less violent character, which have fallen under my notice; they will serve perhaps to illustrate the most complicated and severe form of this frightful complaint, and to evince the efficacy of the remedies employed. For Case I. I am indebted to my friend, Dr. R. D. MOORE, under whose care it occurred.

**CASE I.**—Mary Hall, aged twenty-three years, of intemperate habits, has been confined for the last year, with a partial paralysis of her lower extremities, together with many nervous symptoms, which occur at intervals; is subject to frequent attacks of mania, convulsions, &c. She was admitted into the Alms-house in the summer, and has since undergone a variety of medical treatment, without obtaining any permanent relief; was not sufficiently intelligent when I was called to her, to give any account of the commencement or probable cause of her disease, though it is probably dependent on uterine disorder, as she has had no menstrual discharge since admission.

*Dec. 5th, 1831.*—Was attacked with an unusually violent paroxysm of mania, for which she was sent to the cells; she was alternately singing, talking, and laughing in a most boisterous manner; her lower extremities were powerless, while the upper parts of the body were convulsed, the fæces were passed involuntarily, skin cold and clammy, pulse small and corded, tongue thickly coated, head hot.



Ten leeches were directed in the evening to the back of the neck, cold applications to the head, mustard plasters to the feet, and ten grains of calomel to be given at once.

6th. Calomel had operated several times, convulsions still frequent, has slept none since admission. Repeat leeching and mustard plasters, and apply dry cups from neck to sacrum—give two grains of calomel every two hours.

12 M. No improvement—apply tartar emetic plaster, three inches wide, to extend from the lower cervical to the last lumbar vertebra, repeat the leeching every morning until further directions, and continue calomel powders.

7th. More composed, slept about an hour during the night, tongue cleaning, convulsions still frequent—use frictions with the flesh brush, and continue other treatment, diet bland, but nutritious.

8th. More composed than at any time since admission, slept three hours during the night, skin, pulse, and tongue more natural, discontinue calomel, and give a dose of senna tea—plaster has produced considerable irritation.

9th. Still remains quiet—continue treatment.

10th. Has had but one convulsion for the last four hours.

11th. Slept nearly all night, having had but one convulsion, mind much more rational, plaster has been removed, having produced copious pustulation.

12th. Still improving, takes food with a relish, can move one of her toes.

13th. Slept well during the night, complains much of the eruption.

14th. Continues to improve under the treatment.

20th. Moves the feet with ease—omit the leeching.

22d. Can draw the leg upon the thigh, and is improving rapidly in strength, mind perfectly clear.

27th. Can walk across the floor without help, and states that she feels better than at any time since her admission into the house—back still sore.

Jan. 1st, 1832.—Appetite and spirits good, mind clear, is rapidly increasing in flesh and strength.

5th. Her health appears now quite established, menstruation has returned, and her appearance is totally changed; discharged from further medical treatment.

Feb. 28th. Still remains in good health.

CASE II.—Ann Divine, aged thirty years, of a delicate frame and nervous temperament, states, that about three years since, she was

attacked with a violent pain in the ball of the great toe, which gradually involved the ankles, knees, hips, arms, &c. finally attacking the muscles about the chest and face, impeding respiration and deglutition;—these symptoms existed in a greater or less degree for about twenty months, at the end of which time, the disease became concentrated about the muscles of the face, along the course of the lower jaw, in the temples and upper part of the scalp, in which situation she was liable to the most violent and repeated attacks of pain. She was now admitted into the Pennsylvania Hospital, where she remained for a year, under a great variety of medical treatment, all of which appeared to produce but little effect upon the disease, though she experienced great relief during the paroxysms, from the introduction of needles in the vicinity of painful parts. She was discharged from the Pennsylvania Hospital as an *incurable patient*, in the spring of 1829.

About two months after this period, she was admitted into the Alms-house, where she was variously treated by the different physicians in attendance for several months, without experiencing any permanent benefit.

*Dec. 16th, 1830.*—Came under the care of Dr. E. F. RIVINUS and myself; she was now a complete martyr to suffering, and had given up all hope of restoration. She had been under no medical treatment for several weeks. Her jaws were so firmly locked, from the contraction of the adjoining muscles, that she was unable to masticate, and was obliged to subsist on fluid aliment; her paroxysms of pain were still frequent, and so violent as to convulse the whole body. On examining closely in reference to the catamenia, it was found that the discharge was regular, though depraved and deficient in quality, and that the neuralgic pains increased as the “period” approached: the spinal column was found tender throughout its whole course, and quite sensitive towards the union of the lumbar vertebræ with the sacrum. Under these circumstances, we concluded to treat the case as one of hysteria, as laid down by Tate. A mercurial purgative was administered, which operated freely, after which the following was directed, with a view of acting on the uterine functions.—*R. Pulv. gum. aloes, grs. xxiv.; carb. ferri, ʒss.; ol. menth. pip. gutt. iii.; M. ft. pill. No. xij.* One to be taken three times daily; a hip bath was also directed to be taken every night, and continued until the next menstrual period. The upgt. tart. antimon. ʒij. to ʒj. of cerat. simp. to be rubbed down the spine from neck to sacrum every four hours, until an eruption should be induced.

*Dec. 23d.* A copious pustulation, and the patient expresses herself

as much relieved; the jaws are more pliable, and her "constant pains," as she terms them, are much diminished.

27th. Is still improving, is able to eat animal food without inconvenience, though she is obliged to be slow and cautious in mastication; spirits much improved.

30th. Feels her constant pains daily diminishing; continue treatment.

Jan. 2d, 1831.—Had a paroxysm of pain, which was much shorter and less severe than usual.

3d. Feels as well as before the paroxysm; eruption declining in some places; directed the further application of the ointment.

14th. Has been steadily improving until last night, when she had a severe convulsion, which was attended with but little pain, except in the back, which is very thickly covered with pustules. I believe the attack was referable to this cause.

21st. Has been advancing since the 14th; eruption still pretty copious.

25th. Improving daily—left her in charge of Drs. KEITH and MEAD, who continued the same treatment, until we had the satisfaction of finding that a healthy menstruation was established, from which time her health and spirits were reinstated, she was able to take exercise in the open air, her pains gradually left her, and she was discharged July 27th, 1831, after a most suffering confinement of nearly four years.

I have frequently seen her since she left the house, and find that she has had no return of this distressing complaint, and though her constitution still remains delicate, she is able to perform the duties of a domestic, to the satisfaction of her employers.

In reviewing all the information now before the profession on the connexion of spinal irritation with nervous diseases, it may perhaps be summarily stated—

First. That tenderness on pressure in some portion of the spinal column is an attendant on many chronic neuralgic affections, and that by relieving it in the manner proposed, these complaints are either entirely eradicated, or temporarily suspended.

And secondly. That the precise indications, which this circumstance affords, are not sufficiently well understood at the present time, to justify the establishment of any definite pathological principles applicable to the whole class of neuroses.

The subject certainly offers the highest inducements for further investigation, whether considered in its pathological or practical application.

*Philadelphia, 1832.*



ART. II. *Case of Osteo-sarcoma of the Lower Jaw, successfully treated by Amputation of that Bone.* By WILLIAM W. ANDERSON, of Stateburg, South Carolina. (Communicated by Professor GIBSON.)

ABOUT the middle of December, 1829, I was requested by Colonel S. to examine one of his negro men, (Tom, an African,) who was suffering great pain and inconvenience from a large tumour of the lower jaw, and to give my opinion whether or not it could be successfully removed by an operation. The plantation where the negro lived being sixteen miles from Stateburg, it was not convenient for me to go so far until the last of the month, when I went to see him, and discovered his disease to be an osteo-sarcoma of the lower jaw of great size, and of twelve or thirteen years standing. Tom was about forty-five years of age, in other respects healthy and possessed a robust and strong constitution. When the disease first made its appearance he was hired out on a neighbouring plantation, and his master did not know in what manner it commenced; but according to his own account it was occasioned by a severe blow which he received on his jaw. It continued small and grew very slowly for several years, after which it frequently broke and discharged an ill-conditioned and foetid humour and increased rapidly. At this time the tumour extending from the next to the last molar tooth on the left side, to the angle on the other, involving nearly the whole of the lower jaw in the disease; but the great body of it lay on the right side and in front of the mouth. The chin entirely deformed, projected ten inches beyond the neck, distending and protruding the under lip so far beyond its natural position, as to make it impossible for him to shut his mouth. The tongue was raised up and pushed from its place to the left side of the mouth, and confined in such a manner as to make deglutition difficult and render his articulation so indistinct that he could scarcely be understood. Externally the tumour presented a pretty even and uniform surface with the exception of some fistulous openings and the scars of others which had healed; but that portion of it which was to be seen within the mouth was very irregular, having deep indentations and fissures running in different directions and openings, which were constantly discharging their foetid matter mixed with saliva. All this portion of it was of a deep florid colour. Altogether the disease exhibited a loathsome and frightful appearance, and rendered the life of the poor negro almost insupportable. The extent and difficulty of the operation were explained to him; being at the same time encouraged by the probability of its successful termination;

he readily consented to have it performed. He was accordingly sent to me in a few days, and on the 14th January, 1830, in the presence of Dr. RICHARD ANDERSON, of Chesterville, Dr. YATES of this place, and several spectators, and particularly assisted by Dr. E. H. ANDERSON of Camden, I removed the tumour in the following manner.

Being seated in a chair and his beard shaven, the dimensions of the tumour were first taken. From the lobe of one ear to that of the other across the chin, it measured eighteen inches; from the lobe of the right ear to the termination of the disease on the other side, fifteen and a half inches; and from the trachea to the edge of the lower lip, ten and a half inches; and when removed, weighed within one ounce of three pounds.

The operation was commenced by making an incision from the side of the neck on the right side to the angle of the jaw on the left, passing under the chin in such manner as to ensure a large flap, which was dissected down to the neck. Then another incision was made between the same points, following the direction of the jaw, passing some distance below the angles of the mouth, and leaving out all that portion of the skin which had become diseased—another flap was formed by dissecting the integuments from the upper side of the tumour. It is worthy of remark, that the chief difficulty occurred in performing this part of the operation, occasioned by a profuse hæmorrhage which could not easily be stopped by ligatures; for besides the fascial artery and some small branches which were easily secured, some large blood-vessels lying immediately on the surface of the tumour, which seemed to be entirely venous, were divided and bled so profusely that in a short time syncope was induced. It now became necessary to remove him from his seat, and place him in a horizontal posture, which occasioned a little delay; but the hæmorrhage ceased and the operation was continued by exposing the bone near to the tooth next to the last grinder on the left side, and dividing it as expeditiously as possible, with a metacarpal saw fixed for the purpose in the handle of a file. The soft parts were now divided, and the tumour removed by passing the scalpel through the diseased bone, on the right side where it was very much enlarged, hollow and as soft as cartilage, leaving a portion of diseased bone at the angle of the jaw, which it was indispensable to remove to ensure the success of the operation. This was done with as little delay as possible, but was more tedious than the division on the opposite side, on account of its position and the bone being broader and less firmly fixed. There was no hæmorrhage after the fainting to retard the operation, nor did any occur after the circulation of the blood was fully restored.

The blood being washed clean from the wound, and no further hæmorrhage supervening after the patient had sufficiently revived, the flaps were brought together and united by the interrupted suture with strips of adhesive plaster between the stitches. A compress of soft rags and bandage formed by a roller passing under the *chin*, and over the head, and then round the head to secure it in its place, completed the dressings. He was very much exhausted by the operation, and when put to bed his pulse was extremely languid. He however breathed easily and made no complaint.

15th. Rested well through the night, does not complain of much pain; pulse still languid, moves his tongue with facility, and articulates distinctly enough to be understood. *Evening*. Swallows with ease, and has taken in the course of the day a pint of arrow-root, made by pouring a pint of boiling water on a table-spoonful of the arrow-root, first mixed with a little cold water. It was sweetened and given to him through a small funnel.

16th. Rested well last night, but complains more of pain this morning; has some head-ache, pulse fuller and more frequent, but no fever; has had no evacuation from the bowels since the operation; ordered a purgative enema. *Evening*. Enema produced two copious stools which relieved his head; has taken to-day a quart of arrow-root prepared with equal parts of milk and water, and sweetened with brown sugar.

17th. Rested tolerably well; complains of head-ache, and feels very uncomfortable; suppuration copious, removed the bandages, washed the wound and dressed it, as at first, after which he took his arrow-root, and felt more comfortable. *Evening*. Has had a natural evacuation, pulse eighty-two, soft and regular.

18th. Rested well last night, pulse eighty-six, and soft; takes nourishment well, bowels easy; wound suppurates freely, and a considerable space on the right side not united by the first intention; regret that I had not made use of the twisted instead of the common interrupted suture, as this last has not prevented the skin from folding inwards and separating the cut edges.

19th. Doing well, cavity of wound filling up with healthy granulations, appetite good, evacuations regular, rests well.

21st. Removed the common sutures from that portion of the integuments on the right side, which did not unite by the first intention, and made two quilled sutures.

25th. Continues free from fever, rests well, has good appetite, takes nourishment freely, articulates better, and improves daily in his appearance. The quilled sutures have answered completely the inten-



tion of keeping the edges of the integuments in apposition. The tongue which has been furred since the operation, is now quite clean.

From this time every thing went on well, the healing process though slow was not interrupted by any untoward circumstance. He grew tired of liquid food, and about the middle of February began to eat rice and milk, homminy and milk, and sometimes molasses instead of milk. On the first of March, he was able to go about and assisted of his own accord some carpenters who were at work near his house in handing their tools, holding the timbers which they were hewing and the like. There was still a small opening through the cheek through which particles of food passed whenever he eat. I neglected him somewhat, and it remained so for some time. It became necessary to touch it with caustic, and to apply a strip of adhesive plaster, which had the desired effect, and in a short time it was entirely healed, except a hole about the size of a small quill which was again neglected, and remained so until about the first of May, saliva and small articles of food passing through it, when the caustic was again applied, both externally and inside of the cheek with the same good effect. It now healed up entirely, and has remained well to the present time, just two years having elapsed. Tom expressed such a strong desire to live with me, that I purchased him, and he has been a constant labourer on my plantation ever since. I hear of no difficulty about his eating, and he has not during that time to my knowledge been stopped from his work by any sickness, except a slight attack of bilious fever last autumn, and a small hurt which he received by a fall from a wagon. The disease appears to be entirely eradicated, and the flesh is as firm and sound there as in any part of his body. The flaps were very large, and in healing formed a fold in front of the scar left by the wound in such a manner as to supply in some measure the place of a chin, and he is by no means as much disfigured as one might suppose a person would be who had lost almost the whole of his lower jaw bone. The deformity is not so great as to attract particular notice, or to render his appearance disagreeable.

*Stateburg, South Carolina, May 4th, 1832.*

ART. III. *Observations on the Cholera of Paris.* By C. W. PENNOCK,  
M. D. and W. W. GERHARD, M. D. of Philadelphia.

THE epidemic which has existed for the last month at Paris, and has not ceased at the moment at which we write, found us pursuing our ordinary medical studies; these were interrupted, the clinical lectures were suspended and all access to the hospitals was for the moment forbidden. The restrictions were, however, soon removed from the medical visits, the attendance became regular and more frequent than in ordinary seasons, but the attention of the physicians was exclusively directed to the study of this novel and dreadful affection. The attention of the ablest pathologists of Europe being thus concentrated upon the study of the epidemic, it was hoped that its anatomical lesions would be observed with care, the succession of its symptoms ascertained, and perhaps that from these data some laws might be deduced of high importance in the treatment of the disease. The cholera had been the subject of special medical commissions in all the European governments, which missions were not without their use, although their object was imperfectly attained, and it is to be regretted that their example was not followed by the authorities of the United States. The American physicians who remained at Paris during the epidemic did not aspire to the honour of representing their profession—belonging to the youngest classes of it, they could pretend to nothing more than their own instruction, and would only be useful as the interpreters of the Parisian pathologists. With these views the authors have ventured to publish a condensed account of the epidemic at Paris, based upon such cases as they had observed in the practice of the most accurate physicians. They believe that the important facts may be contained within the dimensions of an essay, and that this form will be more extensively useful than if they had added another to the multitude of volumes already devoted to the Asiatic Cholera; besides, as we may hope for detailed opinions from the physicians in whose service these facts were collected, all prior publications should be regarded as imperfect introductions to more important documents.

Several hospitals, as the Hôtel-Dieu and the Val-de-Grace, were occasionally visited, but the complete observations were collected at La Pitié, in the wards and amphitheatres of MM. ANDRAL and LOUIS. The reputation of M. Andral as an eloquent professor and learned pathologist is scarcely less known in America than at Paris, but his accurate discrimination and skilful practice can only be fully

appreciated by those who have had the happiness of listening to his personal instructions. The wards of M. Louis have furnished us with the greatest number of facts. The cases were examined with a minute attention and the autopsies made with a care unknown not only in other cities, but at Paris not witnessed except in the wards of the *few* accurate observers. The inquiries of this eminent pathologist in cholera as in other diseases were not directed with the intention of supporting a favourite system, but from the desire to arrive at correct medical data, and to diffuse a taste for accurate observation amongst the numerous pupils who have been educated under his auspices. The Americans who have lately pursued the study of medicine at Paris, are equally indebted to him for his important lessons, and the kind attentions which they have received as individuals; obligations which the authors of this essay are especially happy to acknowledge. The plan pursued will be extremely simple, a number of detailed cases terminating by death, will be presented with their anatomical lesions; and analyses will be given both of these cases and such others as were necessarily excluded by the limits prescribed. A picture of the severe characteristic disease is thus more accurately presented than by general descriptions, and the relative importance of the symptoms may be readily understood. Other observations will furnish examples of the lighter forms in which medical science proved sufficient to overcome the malady; unfortunately the violent symptoms which the disease frequently assumed were rarely subdued by any system of treatment. The summary devoted to the general history of the disease need not be long, the only points of interest being such as were peculiar to the epidemic in this city; these will be noticed as fully as the facts yet communicated to the public will warrant. The important question of the treatment is yet undecided, and should only be discussed with caution. What opinions the majority of the Parisian physicians have adopted cannot be ascertained, and in the present limited knowledge, suggestions should rather be thrown out than positive opinions advanced.

The epidemic commenced on the 26th of March, in the quarter of the "cité," a damp island in the Seine inhabited by the most wretched classes of the population, and in a few days it extended on each side of the river, through the dirty and narrow streets in that part of Paris. It speedily prevailed with great violence on both sides of the river, but on the northern side it was chiefly fatal in the 8th and 9th arrondissements, including the faubourg St. Antoine; on the southern side all the three arrondissements into which this part of Paris is divided, suffered severely, especially the 10th, in the vicinity of the Ecole



Militaire, and the Invalides, and the 12th, which was a much poorer and worse ventilated district. The populous portion of Paris comprising the 1st, 2d, 3d, 4th, and 5th, arrondissements nearly escaped, so that the apparent mortality was really in a much greater ratio for the five or six districts, which the disease attacked with most violence, than it seems to have been for the whole city.

It was at first imagined that cholera was a disease of the poorer classes, an error which probably arose from its appearance in the damp, unhealthy districts which are tenanted by the most necessitous part of the population; the fancied exemption of the wealthy soon ceased when the victims became numerous in the aristocratic suburb of St. Germaine; the residence of most of the ambassadors and nobility. The portions of the city which suffered least, perhaps owed their exemption to a more elevated and better ventilated position; but general conclusions of this kind would be opposed by so many exceptions, that we do not venture to make them with confidence in their correctness. The aged or those past the prime of life, were much more subject to cholera than the young, and less capable of resisting its violence; we had prepared some tables of the ages most affected by cholera, but we abstain from all statistics, as the documents are at present necessarily incomplete. MM. Villerme and Parent du Châtelet are at this moment collecting the materials of an accurate work upon the statistics of cholera, which we shall probably communicate in a subsequent number of this journal.

It is proper to remark, that this essay must be necessarily incomplete from the difficulty of compressing abundant materials into a small compass, and the peculiar circumstances under which the authors were placed. Believing that the basis of it is valuable, because it is the results of the experience of the first pathologists of the age, the authors only regret their inability to act as more faithful interpreters.

CASE I. Salle St. Paul, No. 22. Service of M. Louis. Lussat Joseph, ætat. sixty, groom; Rue de Seine, No. 5, 12th Arrond. entered April 24th, 7½ A. M. Well nourished during the winter, and slept in a dry room in his stable; he commits no excesses, and generally has an excellent appetite and digestion, but in his ordinary health he states that he has two or three liquid stools each day. Last night he slept well, rose as usual at 3 A. M. to feed his horses, and was in perfect health then, as during the whole of yesterday, when he ate and worked as usual. At 5 A. M. thirteen hours since, he was seized with a violent diarrhoea, at least ten discharges before his entrance; the diarrhoea was not attended or preceded by colics or

other pain in the abdomen, nor by chill and perspiration. Cramps occurred soon after the attack, beginning in the legs, and since continuing without interruption, but not severe enough to force cries from the patient. He vomited for the first time while in the litter on his way to the hospital, and also since his entrance, the matter vomited was without bitterness or other taste. Has passed no urine. Voice became feeble from the beginning. No dyspnœa.

Actual condition.—April 24th, 8½ A. M. Face livid, moderately violet, cool, especially the nose, eyes hollow. Temperature of arm and forehead nearly natural, lower part of legs cool, the upper part of the chest is also more or less livid, and cooler than natural, but the rest of the body is of the usual temperature. The veins of the upper extremities were also distended, even those of the hands were a little elevated. Sight and hearing perfect, intelligence unimpaired. Skin of ordinary sensibility, the folds made in the neck by pinching it up, very slowly effaced. Respiration 34, a little high. Pulse 88, very small and feeble, but regular. No cephalalgia, no pain or malaise when the cramps cease, nor any difficulty in the respiration. Somnolence, but checked by the cramps. Cramps are very violent, and exist both in the upper and lower extremities, especially the latter; the pain produces contortions of the face. Tongue cool, very livid. Thirst moderate. Abdomen indolent in its whole extent, even on pressure; the usual resonance on percussion above the umbilicus, but dullness of sound at and below it. The matter vomited since his arrival is formed by a watery liquid, (like dish water,) and containing flocculi of mucus, which do not resemble boiled rice. In general the patient seems feeble, but not to an extreme degree.

Ordered lemonade. Injection of linseed with ʒij. laud. Sydenham, to be divided in four parts, and one given every two hours. Frictions every half hour.

11½ A. M. The blue colour is now very marked at the chin, pulse scarcely sensible. Somnolence interrupted frequently by the painful cramps of the lower extremities. Two injections were administered, no vomiting nor dejection has occurred. Oppression at the epigastrium; indifference to the kind of drinks offered to him. Sinapisms to thighs. Frictions frequently.

4 P. M. Deep leaden blue colour on the whole body, incomplete loss of senses and intelligence, the patient appears to understand questions, but cannot reply, or return signs. Forearms cool, and covered with sweat. Radial pulse still perceptible, but very feeble, and frequent; the carotids pulsate feebly. Cheeks and nose cool, rest of face of natural temperature. Eyes more hollow than this morning, axis of

both directed outwards, pupils a little less than a line in diameter, the eyes are encircled, (cernés,) and bright, but without expression, and motionless. Respiration 32, high and noisy. Abdomen slightly tympanitic.

The injections and frictions were administered as directed. Death at 5 P. M.

*Autopsy, April 25th, 9½ A. M.*—Skeleton rather large and well-formed. Body rather thin. Face blue nearly, as in the last moments of life; livid blue unequally marked in the lower extremities. Body cold, except in the abdomen. Great cadaveric rigidity. Muscles large, of good colour, and not fishy, (poisseux.) Head.—Cranium was nearly twice the ordinary thickness. No blood external to dura mater. Very considerable infiltration under the arachnoid of a thin and livid red liquid. Brain small and very moist. The cortical substance grayish, and of deeper colour than ordinary. Medullary matter moderately injected. The whole mass of good consistence, but flabby. Each of the lateral ventricles contained about six drachms of serosity, less red than that of the arachnoid. Corpora striata were of the natural tint, but a little deeper than usual. The annular protuberance was remarkable only for its flaccidity, which was even greater than that of the cerebrum. The cortical substance of the cerebellum was livid red, and at its base there was about an ounce and a half of serosity. The spinal marrow was perfectly natural, both in colour and consistence, the nerves passing from it were equally free from appreciable lesion. The semilunar ganglion was grayish and reddish, and very firm so that it was impossible to divide it with the fingers, a line in thickness. Superior cervical ganglion was small, an inch long, and a line and a half broad, and of pale gray colour, it was separated by an interval of two lines from the middle ganglion which is also normal. The cervical plexus was perfectly natural, the par vagum offered at its exterior only some longitudinal red lines between its filaments. Thorax.—*Pericardium* healthy and without liquid, a little viscons on the exterior face of the left ventricle. The heart was of moderate size and contained much liquid blood, but not the least coagulum. The walls of the left ventricles were six to eight lines in thickness, and more so in the parts corresponding to the columnæ carneæ; its cavity, like that of the right, was a little larger than in the natural state. The *epiglottis* was moderately injected on both its faces, it was less pliable than usual; some injection was observed within the *trachea*, but only to a marked degree upon the projecting cartilages. Membrane healthy in other respects. The *left lung* was universally adherent, its upper lobe was light, and of a



bright red colour internally, excepting some blackish spots where the tissue is not evidently more dense than in other parts. The inferior lobe was heavier, and blackish near the fossa dividing it from the upper lobe, but without granular structure, a quantity of blood mixed with small bubbles of air flowed from it on pressure. The *right lung* was not adherent, its upper and middle lobes were less red than the left, with some dark spots on its posterior part. The inferior lobe was heavier than that of the left; posteriorly for the thickness of ten to fifteen lines, its colour was deep red, without granulation; this colour was circumscribed and contrasted strongly with the surrounding red. The black portion is firm, the fingers penetrate it the more readily in proportion to its firmness, but a moderate and continuous pressure forces out the blood from it with ease, and leaves the pulmonary tissue of the ordinary cohesion. Abdomen.—The *œsophagus* offered many crypts, especially in its upper third, the mucous membrane was every where covered by its epithelium. The *stomach* was rather large, containing at least a quart of troubled, reddish-gray liquid, thin, and intermixed with mucous flocculi of the same colour. The mucous membrane in general was gray, with a slight shade of livid pink; some spots of vermilion-red were observed near the cardia, and were formed by a multitude of little red points, more or less confluent. The membrane was of a smooth, velvet-like appearance in the breadth of four or five inches along the small curvature; in other parts it was mammillated, especially along the large curvature, and great tuberosity. No depression of surface, or longitudinal bands were observed in any part. Thickness, normal throughout; the *strips* yielded upon traction were from two to four lines in the great tuberosity, six to eight along the large curvature, and twelve or more in the small curvature and adjoining parts, the membrane was slightly injected in its thickness, but less than the subjacent tissue. *Small intestine* slightly tympanitic, white externally, with a slight shade of pink resulting from numerous and rather large muscular ramifications. It is distended by a large quantity of whitish-gray, troubled liquid, a little thick at first, but gradually diminishing in consistence as we approach the cœcum, where it is still abundant. A large quantity of irregular filaments, more or less long, and either solitary or united, float in it, looking like the moss of stagnant pools; no green liquid in any part. Some whitish or yellow mucus adhered to the intestine, much more abundant in the first than the second half, but every where easily detached. The general appearance of the mucous membrane was like that of the exterior, its thickness was normal throughout; in the jejunum it yielded strips from two to five lines,

afterwards from five to ten, longer in proportion as we approach the cœcum. It is *white* throughout, except little interruptions from vascular ramifications, which require close attention to be distinctly perceived.

The glands of Brunner existed in the last half of the ileum, at first they were scattered, and not larger than a mustard seed, afterwards to the three last feet more numerous, and of the size of a millet seed. The elliptic glands of Peyer were scattered in the whole length of the ileum, they projected very little above the neighbouring parts, from which they were distinguished by the absence of the valvulæ, and by grayish points which were observed in a certain number. The sub-mucous cellular tissue was moderately injected, the colour being much brighter after raising the internal coat. The mesenteric glands were small, healthy, of a fawn colour, (colour of weak café au lait.)

The *large* intestine was a little larger than natural, and contained a whitish-gray matter, very thin in the first half, but gradually thicker in the second, in the two last feet being nearly of the aspect and consistence of pus. The mucous membrane was pale throughout, except a slight shade of lilac in some points. Thickness normal throughout, the strips raised from it were from two to four lines in the cœcum, about the same length in the ascending and transverse colon, and three or four lines afterwards. Some crypts of half a line in diameter were seen in the two last feet of the intestine.

The *liver* of normal size, less red than usual, its tissue finely granulated, and easily penetrated by the finger, moderately gorged with blood. *Gall-bladder* distended by greenish and very fluid liquid. The *spleen* was deep red, and rather large, containing five or six cysts a line or two in diameter, which inclosed a calcareous matter. *Kidneys* healthy; nothing remarkable in the calicis and infundibula. The *bladder* of the size of an ordinary pear, contained about an ounce of troubled, gray liquid, slightly tinged with pink; its membrane was healthy.

W. W. G.

CASE II. Salle St. Charles. Service of M. Louis. Julie Française, shopkeeper, æt. 34, admitted April 12th, midnight. Her history, as given by herself, is, that during the 11th and 12th she had had diarrhœa, attended by borborygmy, but which was so slight during those days that she was not obliged to discontinue her occupation. She had no other symptoms except lassitude, sense of weakness, and loss of appetite, until the evening of the 12th, (7 P. M.) when there was sudden augmentation of the diarrhœa; the dejections became ex-

ceedingly frequent, and were accompanied with colic, nausea, vomiting, and cramps. The colic lasted but a short time, and soon disappeared; she vomited three or four times a liquid like water, which had no particular taste; the cramps commenced in the legs. She had not had any cephalalgia or tinnitus aurium; has experienced great oppression in respiration since 12 o'clock last night, since which the voice has been very feeble; general prostration for the last eight hours.

13th, 8½ A. M. Present situation. Has just been bled ℥vj. which has slightly relieved the sensation of oppression; and the expression of the countenance is better. Face and lips cold, of a violet colour; body generally livid, marbled with violet or purple spots, and cold; the patient, however, complains of the burning sensation of the heat of the surface, and throws her arms out of bed to relieve this feeling. The folds of the skin, (caused by pinching it up,) efface themselves slowly. No cephalalgia; sight and hearing good; intelligence unimpaired; almost entire aphonia; tongue cool, slightly violet at the borders; thirst intense, desires very cool lemonade; has no nausea after drinking. Abdomen is sunken, without pain even upon pressure at the epigastrium or other parts; no sensation of internal heat. Stools liquid; urinates freely; cramps frequent and severe in the legs, none in the thighs or arms; pulse 120, very small, regular; respiration twenty-four, costal. R. Frictions every half hour to reëstablish heat; injection of decoction of flaxseed with ℥ss. of laudanum every two hours, and—antispasmodic potion, ℥iv.; alcohol, ℥v.; syrup orange peel, ℥j.—℥ss. every half hour.

5 P. M. Feels better; respiration less frequent, not costal; face cold as ice; upper limbs covered with a cold sweat; eyelids half-closed; eyes immoveable; features fixed and unchanging. Upon looking at her we would suppose that the functions of life had ceased. Pulse 100, very small, extremely weak. Continue the treatment. Died 14th, at 5 A. M.

*Autopsy twelve hours after death.*—Frame large, well-formed, some slight violet appearances at the internal part of the thighs. This morning, (April 14th,) at 10 o'clock it was observed that the heat of the surface of the body was much greater than it was yesterday at 5 P. M.; no emaciation; embonpoint considerable; muscles of a fine colour and good consistence.

\* *Cranium.*—Numerous drops on the external face of the dura mater; cerebral veins distended by a large quantity of blood; pia mater moderately and universally injected; sub-arachnoid infiltration; cerebrum moist, of good consistence; cortical substance of corpora



striata darker than natural; medullary substance slightly injected; right lateral ventricle contains  $\frac{3}{4}$ ij. of transparent serosity; left, half that quantity; cerebellum in the same state as the cerebrum; tuber annulare a little grayish and violet, firm, like the medulla oblongata.

Par vagum natural; superior cervical ganglion a little grayish, natural in volume and consistence. The semilunar ganglion accidentally removed with the pancreas, was not examined.

*Thorax.*—Pericardium healthy, moist, containing  $\frac{3}{4}$ ss. of citron-coloured and limpid serosity. *Heart* of good size, contains a moderate quantity of blood, with some fibrine; coagula of considerable firmness in right ventricle; walls of the ventricles firm; the left thickened

*Lungs.* Left pleura perfectly healthy; slight cellular adhesion to the lung; left lung heavier than natural; its inferior lobe red and engorged with blood; the upper contains some blood; in each lobe air is mixed with the blood. Right lung, adherent to the pleura throughout its extent, offering at its summit large vesicles, from one to two and a half lines in diameter, sometimes even greater—flabby, a little heavier than natural, reddish and grayish in superior lobes, red in the lower, containing less air, and same quantity of blood as the left lung.

*Abdomen.*—Stomach of moderate size, containing a fluid resembling the white of eggs, in which float mucous flocculi incompletely transparent. The mucous membrane is of a light violet-red in the half of the anterior face next the cardiac orifice; whitish or little green in the other parts. On the anterior and posterior faces, near the large curvature, are observed, say fifty points of half a line in their greatest diameter, where the membrane appears at first sight to have been destroyed; this, however, is not in the entire thickness; for upon detaching the membrane from the subjacent cellular tissue, the holes are not visible on the external face; these half-perforating orifices are equally demonstrated when a scalpel is passed through their centres. In the large tuberosity, in the posterior and anterior face of the great and small curvature, the membrane is observed of natural thickness and of good consistence. Œsophagus is covered with its epidermis, and offers some crypts.

Small intestine externally of a light rose colour in their whole extent; slightly injected, tympanitic; contains in the first half of its length a whitish liquid like thin porridge, in which floats a light mucus; in the second portion of the intestine the liquid is much thinner and more abundant; almost as thin as water, in which is suspended a multitude of grayish lilac flocculi, as if coloured by claret and water, and in the midst of which are numerous air-bubbles; the appearance

very like that of trifle, (*œuf à la neige*.) The internal colour of the intestine when cleaned of mucus is the same as that externally. The odour emitted upon opening the intestine is very peculiar, disagreeable, and extremely pungent. The mucous membrane is of a dull white throughout, excepting the last two feet, where it is of a slight rose colour; its thickness is natural in the jejunum; it is slightly thickened in the ileum. Strips of five to six in length are obtained in the jejunum; six or nine in the ileum. In the last half of the intestine the elliptic glands of Peyer are of a pale white, milky colour, *apparently* not thicker than the neighbouring parts; careful examination by touching them, proves them to be more projecting in the last five feet; in this space are observed a small number of the glands of Brunner, which are at first of the size of the *semola*, afterwards three or four times larger. The mucous membrane in its extent has merely some vascular ramifications, whilst the subjacent cellular tissue is the seat of an injection visible internally and externally. Mesenteric glands slightly enlarged in size, especially those accompanying the ileum; their colour is ordinarily reddish, consistence good; in other instances they present the colour of coffee with milk.

Large intestine slightly enlarged in its first half, containing a whitish and slightly grayish matter, which is thicker and more abundant in the first than in the second half. The mucous membrane is generally pale; some red, projecting spots, caused by the engorgement of some crypts, which adhere to the subjacent cellular tissue, are seen in the transverse colon, and near the sigmoid flexure; the redness of the membrane is very deep; its consistence and thickness normal throughout.

*Liver* dry on exterior, and covered with a viscid substance; size normal, paler than natural, in other respects healthy. The gall-bladder contains a small quantity of a greenish-black, viscid bile.

*Pancreas* pink-white externally, nearly of the same colour as that of small intestines; size and consistence normal.

*Spleen* enlarged—otherwise sound.

*Kidneys* of natural size, perfectly healthy, calices and infundibulæ present nothing remarkable. *Bladder*—size of a large apple; livid at the fundus; parietes not thickened; mucous membrane covered with a light grayish, creamy substance, easily removed by the scalpel.

Uterus increased in size—one-third above the normal standard; walls of the body ten or twelve lines thick; its cavity contains a small quantity of a red liquid of the consistence of mucus, under which the walls are less red, except towards the angle of the fallopian tubes. Ovaries present nothing remarkable. W. W. G.

CASE III. Hôpital de la Pitié, Salle St. Athanase, No. 13. Service of M. Louis.—Jean Gonang, æt. twenty, sawyer of planks, living in the tenth arrondissement, entered the hospital at 8 A. M. During the winter has experienced much privation and his alimentation has been very insufficient. For eight days preceding the attack he had cephalalgia, but which is at present much diminished.

10 A. M. Present situation. Has been sick nine hours; yesterday worked as usual to 6 P. M. and with exception of head-ache was in good health. Slept well until 1 o'clock this morning, when he was awakened by violent colic; had no evacuation; an hour afterwards cramps and nausea supervened; had neither chill nor fever at the onset; sight impaired since 2 A. M.; has had four watery dejections without vomiting; he has neither nausea nor head-ache; has not urinated since last night; voice is much changed; cramps almost constant in the superior and inferior extremities, beginning in the toes and fingers; face violet, eyes excavated, encircled by a dark line; the whole face, particularly central parts, cold; legs and arms cold; thighs and abdomen of natural temperature; anterior part of the chest of livid whiteness; folds of the skin efface themselves quickly; tongue cool, natural on the edge, a little yellow in the centre; thirst intense, deglutition rapid, desires warm drinks; no disposition to urinate; constant anxiety; arms thrown out of bed; drowsiness or sluggishness of mind, though the patient is immediately aroused by the least question; respiration thirty-four, costal; pulse almost imperceptible; heart beats with force, 108; skin is insensible to pinching with the nails: treatment warm lemonade; venesection,  $\frac{3}{4}$ x.; if blood should not flow, twenty leeches to the epigastrium, and six to each side of the neck; dry frictions every half hour; if no amelioration after bleeding, give potions No. 1, 2 or 3, according to circumstances; a vein was opened immediately, but it was found impossible to procure blood; leeches were then applied, which drew well, but no amelioration followed, and death ensued at 3½ P. M., thirteen hours after the onset of the malady.

The only feature of peculiar interest in this case was the absence of vomiting, a symptom which forms so constant a characteristic of the disease.

*Autopsy twenty hours after death.*—Frame well-formed, stature elevated, cadaveric rigidity very considerable, overcome with difficulty, lividity of the face, and violet spots on the limbs, muscles of natural colour, firm, not fishy.

*Cranium.*—Sub-arachnoid infiltration considerable; substance of the brain much injected, of good consistence; large quantity of serum



in left ventricle, corpora striata of darker colour than natural, medullary matter of cerebellum of violet red, costical part of a deeper colour than natural.

Par vagum healthy; superior cervical ganglion grayish as in the natural state; semilunar ganglion gray, a little livid, very friable.

*Thorax.*—*Heart* firm, of good size, containing a quantity of liquid blood; in the right ventricle was found a yellow, fibrinous clot. *Lungs* slightly viscid at their exterior, no serosity in the pleura, left lung light, inferior lobe gorged with blood, upper lobe of a bright red, colorization of right lung similar.

*Abdomen.*—Stomach augmented one-half in size, containing much liquid matter of the colour and consistence of whey, in which floated some oily drops. Mucus very adherent to the membrane, except at the great cul-de-sac, where the mucous tissue is of a pink colour like the peeling of the onion, and striped; the mucous membrane is soft in the superior fourth of the stomach, better consistence in other parts; in these portions the adherent mucus can be detached, but with difficulty, by the back of the scalpel. Mammillation of the membrane occurs in the half nearest the pylorus.

*Small intestine*, in general of a livid rose colour, owing to the sub-peritoneal injection; it is slightly distended in its superior third, containing a thick whitish matter, with flocculi resembling broken rice in the first half, and of a grayish tint; in the second half this fluid is reddish and more abundant; general internal lining of the intestine was a light pink tinge, slightly livid; valvulae conniventes thicker than natural; plates of Peyer, of a dull white, very visible but not projecting beyond their usual level; after the evacuation of the fluid contents and washing of the mucous membrane, much mucus still remained adherent to the membrane; mucous membrane thickened in the first third, where strips are four to eight lines; they are longer near the cæcum; numerous cryptæ, (follicles of BRUNSER,) in the last half of the small intestine, which augment as we approach the cæcum, being in the last three feet very close to each other and larger than a millet seed.

*Mesenteric glands* large, size of a kidney bean, of a fawn colour.

*Large intestine*—Colon tympanitic in its whole extent, increased to twice its natural size; containing a tolerably thick liquid of a milk-white or grayish colour, in considerable abundance, in the midst of which are flocculi; the odour of this liquid is peculiar, but not faecal; general internal colour of mucous membrane, white, shaded with pink; cryptæ numerous; in the first foot, confluent, distant from

each other one to two lines; they afterwards become more rare and are again abundant until within two feet of the anus, when they entirely disappear; mucous membrane is every where thickened; yields strips eight to ten lines in length every where. *Bladder* size of a large pear; contains a little liquid, of colour of urine; membrane is pale and healthy. *Liver* of good size, containing a moderate quantity of blood; more easily penetrated by the finger than usual; its colon tolerably deep; gall-bladder contained a considerable quantity of dark green bile moderately fluid. *Kidneys* healthy. *Spleen* enlarged but healthy.

W. W. G.

CASE IV. Hôpital de la Pitié, Salle St. Athanase, No. 11. Service of M. Louis.—A rag-gatherer, aged thirty, was brought into this ward on the morning of April 4th. He had been taken sick at midnight of the third; the day preceding, had worked as usual. The attack commenced by vomiting, numerous stools, intense and universal cramps, which have continued; he had no pain in the abdomen before the appearance of the cramps. April 4th, 8½ P. M. Present situation. Has universal cramps, the intense pain of which forces cries from the patient; expression of countenance that of intense suffering; at intervals gnashing of teeth; face livid and violet; eyes sunken in the orbits, at times watery; profound drowsiness, and does not reply to questions addressed to him; tongue is very cool and moist; has no nausea; thirst intense; deglutition rapid; voice extremely feeble; the surface of the skin of the breast and extremities extremely cold, and impossible to warm it by frictions; experiences relief from dry frictions by flannel; inferior members of a livid paleness; sight and hearing good; pulse imperceptible; respiration twenty-eight, without effort; no pain at the epigastrium, except at the moment of the cramps; experiences an agreeable sensation at the epigastrium after taking the following potion in doses of ℥ss. R. Antispasmodic mixture, ℥iv.; alcohol, ℥j.; laudanum of Sydenham, ℥j.

Prescription. The above potion every half hour, or oftener, if the heat is not reëstablished—one-quarter enema of linseed with laudanum, ℥j., every two hours.

4 P. M. No cramps for an hour; plaits of the skin of the neck efface themselves with difficulty; entire face cold, of a pale lividness, complains of sensation of heat, especially of his forearms, which are however livid and cold; thighs cold; the body of a natural temperature, except the parts which are uncovered; breast livid; intelligence perfect, answers are prompt; natural brilliancy of the eye; no urine, no vomiting, no stools; beating of the heart feeble, 108; pulse insen-

sible on the left side, some think that they feel it on the right; respiration twenty-four, not difficult; agreeable sensation at epigastrium, still continues upon taking the alcoholic potion. (Lemonade, potior: from hour to hour, dry frictions with flannel to limbs.)

9 P. M. Extreme feebleness, cramps in the extremities, dry frictions have been applied where the cramps have existed.

April 5th, 8½ A. M. Face of a livid paleness; central parts pale; eyes dull, covered with mucus; respiration slow, fourteen; pulse imperceptible; body of ordinary temperature; abdomen soft, insensible to pressure; the forearms, though covered, cold. Half an hour since abundant discharges by stool of the colour of lees of wine. Friction to lower extremities. R. Antispasmodic potion, ℥iv.; alcohol, ℥ij.; syrup of orange peel, ℥j.—℥ss. every hour.

3 P. M. Respiration continues. Death at 4 P. M.

*Autopsy, twenty hours after death.*—Rigidity of the muscles considerable; anterior part of the right arm violet; lividity of the lower extremities.

*Cranium.*—Sub-arachnoid infiltration extremely slight; cortical substance of cerebrum of a pink colour, slightly livid; corpora striata pink but deeper; brain in general firm, moderately injected; about a spoonful and a half of serosity in each lateral ventricle; cerebellum in a situation analogous to that of the cerebrum. Par vagum of ordinary thickness, a slight shade of pink externally, white within; superior cervical ganglion of ordinary size and violet colour.

*Thorax.*—Pericardium contains half an ounce of serosity; heart of middle size, of good consistence, containing a large quantity of liquid blood without clots. *Lungs*, some cellular adherences to the right lung, very emphysematous at the base, not engorged; lateral adherences very slight; left lung has but slight adhesions.

*Abdomen.*—*Stomach*, a little distended, containing a tolerably abundant, greenish liquid, in which float mucous flocculi; mucous membrane of pale pink in a part of the anterior face; a pink of a deeper tint and a little livid in other parts; strips one to two lines in great cul-de-sac, in other places of natural thickness; no where mammillated.

*Small intestines*, externally of a redness slightly livid in all its extent, except the four or five first feet, where it is only of a light rose colour; the intestine contains a liquid which is tolerably abundant in its first half, of a colour at first slightly yellow, then of a red, more or less intense; the internal appearance of intestine is a light opake yellow in the four first feet, then of a livid red, interrupted by ecchymosis, or red spots of a deep colour; these are limited to the mucous



membrane of the jejunum and to the three or four last feet of the ileum, where they are more numerous and nearer one another; in the first four feet of jejunum the mucous membrane is of a light opake yellow, and its consistence for this distance is a little less than in the normal condition; in the rest of the intestine the membrane is more or less rose-coloured, (pink,) and slightly injected, and is perhaps a little thicker than in the healthy condition; in the last two-thirds of the ileum, the crypts of Brunner are very rare, small, of the size of a grain of millet; afterwards they become more numerous and larger, so that in the length of two feet they are from one-fourth of a line to a line in diameter; plates of Peyer healthy as well as the mesenteric glands.

*Large intestine* much augmented in volume, and contains a tolerably large quantity of liquid, of a red colour, like the dregs of wine, very fluid, and holding in suspension the same quantity of mucous flocculi as contained in the small intestine; mucous membrane of a livid red colour, more or less deep throughout its whole extent, thickened in the cœcum where it yields strips of four or five lines in length, in the ascending colon strips of ten or twelve lines; the thickness of the membrane is rather greater than natural, but it adheres less firmly to the subjacent cellular tissue; the membrane is extremely soft in the first two-thirds of the transverse colon where it is completely destroyed in some points, presenting the same appearance and the same consistence in the second third; of natural consistence and thickness afterwards. *Liver* of small size, tolerably consistent, healthy; bile sufficiently abundant, dark green, moderately thick. *Bladder*, conoid, containing the amount of volume of a hazlenut of grayish mucous liquid; coats extremely contracted, four lines in thickness; aorta containing a large quantity of liquid blood, no redness.

C. W. P.

CASE V. Salle St. Charles, No. 11. Service of M. Louis.—Hevet, (Charlotte,) a seamstress, twenty-nine years, married April 14th, 1831. For the last month she has suckled an infant. Was taken ill on 13th, at 4 P. M. when a diarrhœa which had commenced in the morning became very violent; an hour afterwards, at 5 P. M. vomiting of a bitter matter mixed with the food which she had taken at 12 o'clock. Cramps came on simultaneously with the vomiting, the cramps recurring very frequently, and the vomiting three or four times. Slight pain in abdomen.

She compares the pain rather to a feeling of suffocation than an acute suffering. Kept her bed since the onset. At 7 P. M. she had cold

sweats not accompanied with heat. Voice feeble since 8 P. M. Suppression of urine. No stools since her arrival here. Matter vomited always bitter. Tinnitus aurium. Entered at 2 A. M. 14th.

14th 8½ A. M. Present condition. Face violet and cold, especially the nose, very moist. Arms cold, but she throws them out of bed in consequence of *sensation* of heat. No head-ache. Dizziness upon rising. Pain at epigastrium, hypogastrium and in the back, experiences shooting pains at the epigastrium. No borborygmi in abdomen even on pressure. Tongue violet and cool. Respiration impeded, thirty, and costal. No pulse at wrist. Desires cold applications to the skin, especially on abdomen. Suppression of urine, which greatly excites the attention of the patient. No cramps. Lemonade. Thirty leeches to epigastrium. ¼ injection of flaxseed, with ℥ss. laudanum, q. b. h.; frictions on limbs, q. b. h.

6½ P. M. No sensation of coldness, yet the upper extremities are cold in their whole extent—arms constantly out of bed. Face cold. Sight a little troubled. Voice sufficiently feeble. Complains of passing no urine. Pain at the hypogastrium. Thirst tolerably great. No vomiting. Respiration high and accelerated, pulse insensible. Thirty leeches to hypogastrium. Injection with laudanum.

Death at 2½ A. M. 15th.

*Autopsy, seven hours after death, 15th.*—Frame rather large, corpulent. The coldness is not complete, and less so than during life at the last visit. Some lividity at the upper and internal part of the thighs. The left mamma was slightly violet, rather large and very moist, yielding a flowing liquid of milk colour; right mamma not remarkable; muscles of good colour. *Cranium.* But little blood on the external surface of the *dura mater*, no *sub-arachnoid* infiltration, and scarcely any serosity in the ventricles. *Cortical* substance and *corpora striata* firm and natural. The *medullary* portion was very little injected, but marbled with livid spots. No appreciable lesion in the rest of the brain.

*Thorax* —*Pericardium* healthy. *Heart* of moderate size, containing a tolerable quantity of black liquid blood in which are some unformed coagula. *Left lung* not adherent, no liquid in pleura, internally of bright red colour, becoming brownish-red in the lower lobe which was a little heavy, but in other respects natural. *Right lung*, similar to the left in weight and appearance, except the upper lobe which was much paler. *Abdomen.* *Stomach* of good size, livid gray externally and containing a tolerable quantity of grayish-yellow liquid, which was very fluid with flocculi of light mucus. Mucous membrane was grayish or whitish along the small curvature, whitish with a slight

pink tint in the other parts, some red points were seen in the great cul-de-sac. The membrane was a little injected in its substance and slightly mammillated in a small part of the large curvature, which was coated with a little viscous mucus; consistence and thickness normal throughout.

*Small intestine*, moderately distended in its whole length, but rather larger in its last than in its first half. Its colour externally was white with a shade of pink in the first four-fifths, afterwards more or less grayish-green. It contained in the first three feet a moderate quantity of greenish and rather viscous mucus, then an opaque, whitish liquid like milk, more liquid and more turbid as it approaches the cœcum, so that in the last four or five feet it is almost as fluid as water. Internal aspect of the intestine was similar to the exterior. The mucous membrane was pale in its whole length, a slight pink tint observed in certain parts resulting from the injection of the sub-mucous tissue. The membrane yields strips of only two or three lines in the first four feet, afterwards eight to twelve, it was not at all thickened in the first half, slightly so in the three or four feet which followed, and afterwards normal. The glands of Peyer were whitish, with a slight shade of lilac, easily distinguished by the difference of colour, but of normal thickness. The glands of Brunner were not numerous, and observed only in the last five feet, where they were scattered and not so large as a millet seed.

*Large intestine*, voluminous in its first and last third, containing a moderate quantity of grayish, turbid, but very fluid liquid, with no signs of mucus; the liquid has a dirty shade in the second half, three or four fragments of yellowish friable matter were found in it, resembling grease. The mucous membrane whitish and grayish throughout, was slightly shaded with livid pink; some points in the first half were deep red, and the whole inferior third was slightly tinged of the same colour. Consistence and thickness natural throughout. The cellular tissue was generally more or less injected, but the membrane itself only in the red parts. Numerous cryptæ were visible in the whole length.

*Liver* of good size, was rather pale and flabby, but not wanting in cohesion; it contained a moderate quantity of blood. Bile abundant, moderately fluid and of dark-green colour. *Spleen* normal. *Kidneys* healthy. *Bladder* contained only a little creamy liquid. *Uterus* of usual dimensions, rather flabby, redder and more moist than natural, its cavity was brownish-red but contained no blood. The *par vagum* was marked with two or three narrow longitudinal lines in a part of its length, but it was perfectly white internally, and the natural size.



The middle and upper cervical ganglions of the sympathetic, very pale, of moderate size and very coherent. W. W. G.

CASE VI. Salle St. Charles, No. 28.—Leger, ætatis 40, work-woman, living Rue du Pont aux Tripes, twelfth arrondissement, admitted 13th of April. This patient's general health was very good—seldom ill before this attack; during the winter was rather subject to privations, want of food, and lived in a cold and damp room. Her illness commenced yesterday evening at 8 o'clock. The first symptoms were diarrhœa with colic pains, followed two hours after by vomiting and cramps; the cramps commenced almost simultaneously in the lower and upper extremities. According to the patient's account, the vomitings were first composed of the food she took, afterwards of a liquid of a somewhat green colour and bitter taste, and the stools of a yellowish-brown colour. This state, accompanied with a general cold sensation, persisted with the same intensity up to the period of her admission, the 13th of April.

At our visit we found her in the following situation. The skin in general was of a deep violet colour, principally the lips and the hands; the eyes without their usual lustre, sunk in the orbit, the orbit was encircled by a well-marked blue rim; the countenance blue, expressive of anxiety; cheeks, nose, forehead and chin, cold and livid; breath almost cold; tongue cold, but moist, and of a yellowish hue in the centre, slight red on its borders. The extremities cold and livid, particularly the hands and feet; pulse at the wrist insensible; strong costal respiration; the tongue had also a violet tinge; the epigastric region painful on pressure; general debility, such as to render her almost incapable of replying to our questions, however her intellectual faculties were perfect, as well as her senses, such as her sight, taste, smell, &c. &c.; she complained of noise in her ears, and a little head-ache; frequent liquid, yellow stools, and vomiting of a whitish-coloured liquid, in part composed of the drink she took; cramps frequent, particularly in the lower extremities, and a sensation of oppression in the chest. Voice completely extinct; somnolence; and the general appearance of the countenance such as that one would imagine it that of a corpse, so like was its expression that we were obliged to shake the patient to be certain, she was living; the right conjunctiva was considerably injected. Prescription, two half enemata with ℥j. of alcohol, and twenty grains of camphor in each; the vehicle being for each ℥vi. of decoction of starch. A potion composed of—aquæ menth. piperitid. ℥iij.; æther sulphurici, ℥ij.; syrup. cit. aurantii, ℥i. Misce. A table-spoon-

ful every twenty minutes; mustard sinapisms on the belly, and an ointment composed of axunge, ℥ij., ammonia, ℥i., mixed together, and rubbed to the anterior part of the thorax; sinapisms to the legs and feet.

14th April, at 8 o'clock, *A. M.*—The face less blue, lips less violet than yesterday; tongue natural colour, continues cold; thirst, nausea without vomitings, pain around the umbilicus, involuntary stools, suppression of urine; pulse 100, very small at the wrist; the cramps persist, as well as the aphonia; respiration constantly costal, thirty-six in a minute. Prescription—lemonade, the same potion as yesterday; 2½ enemata with ℥i. alcohol and ℥i. camphor in each. The ammoniacal ointment on the chest as yesterday; sinapisms sprinkled with spirit of turpentine to the extremities.

15th, 8 o'clock, *A. M.*—The ammoniacal ointment has determined a slight rubefaction. The patient took but half of the potion, face and extremities cold, tongue cold, little thirst, nausea and some vomitings, no stools, nor urine, nor desire to make water, absence of the radial pulse, pulsations of the carotid 84, respiration accelerated, thirty-six costal respirations. Prescription—lemonade, ½ enema with ℥i. alcohol, ℥i. camphor in it, and ℥v. of decoction of starch as vehicle. All these symptoms having augmented during the day, the patient expired at 4 o'clock, *P. M.* the 15th of April, having retained her reason almost to the last moment.

*Autopsy, 16th of April, at 9 o'clock, A. M.*—The cadaverous stiffness was very little marked; the hands, knees, and feet presented a very remarkable violet appearance; the skin of the abdominal parietes was of a greenish hue; the inferior vena cava and the vena porta were full of a black blood of a pitchy consistence and colour; the stomach very much contracted, diminished in size nearly to the volume of the small intestine, and contained a blackish mucus, in which were to be seen small white bodies; the mucous membrane of the great tuberosity of the stomach was of a slight rosy colour; this colour was more marked in proportion as it extended along the great curvature of the organ, to the extent of four inches; in the great curvature the mucous membrane was of its natural consistence; the mucous membrane of the rest of the stomach presented a mammillary appearance; the mesenteric veins full of black blood; two ounces of a brownish viscous liquid in the cavity of the peritoneum; the small intestines distended by a great quantity of gas; duodenum contained a small quantity of thick mucus, of a brownish-yellow colour; the mucous membrane of the jejunum was covered with a yellowish

mucus, of a thick and adhesive consistence. In the beginning of the ileum a large quantity of a yellowish liquid, in which floated some slimy, semitransparent flocculi; a foot lower down in the intestine the matter was more liquid, of a chocolate colour, and contained a smaller quantity of the corpuscles spoken of above; this substance was extremely foetid; the colour of the mucous membrane of the intestines, duodenum, and jejunum, was of a pale rose; red blotches, 1st, twelve lines in length and six in breadth; 2d, seventeen lines in length and six in breadth; 3d, twenty lines in length and five in breadth; at the commencement of the ileum they become of a deeper colour, and the cellular tissue under the mucous membrane was considerably injected; a foot further forward the mucous membrane was of the colour of lees of red wine; the colour further forward of the mucous membrane was rather grayish, uniformly so; about two feet from the extremity of the ileum the mucous membrane was of a deep greenish-red colour; some insulated follicles towards the extremity of the small intestines. All the *plates* that we found on the mucous membrane were of a greenish colour, of a granulated appearance, and hard to the touch, little swollen, and perforated by small alveoli; the large intestine distended with foetid gas, and contained a homogeneous, *chocolate and milk-coloured* liquid; the mucous membrane of the cœcum was extremely foetid, and presented some red blotches here and there, with the sub-mucous cellular tissue considerably injected, and the mucous membrane softer than natural. At the origin of the right lumbar colon, and in the extent of two inches, the mucous membrane was very red and softened; the left lumbar colon was of a pale colour; in all the extent of the transverse colon there existed numerous *very small* ulcerations, the largest of which was about six lines in diameter; these ulcerations were round, their borders red, and their basis, or rather their centre, of a pale grayish colour; the mucous membrane softened in all its extent; the sigmoid portion was pale and white; the superior part of the rectum of a livid red colour in the extent of six inches; its lower extremity presented a livid appearance; the liver was livid in all its extent; the middle of the right lobe was of a whitish colour; its substance was but little injected with blood of ordinary consistence; the gall-bladder distended with very black, thick bile; spleen four inches in length, two in breadth, of a red colour and ordinary consistence. Heart; its right cavity contained a fibrinous clot of blood, discoloured; coagulated black blood in the left ventricle; a fibrinous clot little discoloured in the left auricle. The brain and the uterus presented nothing re-



markable. The bladder was quite contracted, and contained no urine; its mucous membrane appeared natural. The kidneys also natural.

Case communicated by M. EAGER, attached to the medical service of La Pitié.

CASE VII. Salle St. Charles.—Genvière Blanchat, æt. 23, work-woman, living Rue Fosse St. Marcel, twelfth arrondissement, admitted to-day. She has suckled an infant for the last month. She was perfectly well yesterday, working as usual. The attack commenced suddenly this morning at 7 o'clock, by diarrhœa accompanied by vomiting; cramps followed two hours afterwards, and were confined exclusively to the lower extremities. From that time extreme weakness, and she has been obliged to be in bed since.

April 12th, 4 P. M.—Face, hands and forearms bluish; eyes very hollow; lips violet; entire face cold, except the forehead, which is of natural temperature; hands and forearms cold; feet cold; neck and upper part of chest almost of natural temperature, but of a bluish-white colour; rest of the body of ordinary heat; folds of the skin of the neck slowly effaced; sight troubled; hearing good; voice feeble since last two hours; intelligence perfect; complains of sense of oppression, and asks to be bled; tongue cool, whitish, and a little livid; thirst intense; patient has not the sensation of cold either in the hands or feet; pain she experiences is that of oppression, does not resemble colic; has urinated within the last two hours; pulse insensible. R. Lemonade for drink. Antispasmodic potion, ℥vj., with syrup diacord., ℥j., of which take ℥ss. each hour; one-fourth of enemata of infusion of flaxseed, with ℥j. of laudanum; venesection; forty leeches to the epigastrium; frictions with ammoniacal liniment.

Immediately after the bleeding she appeared much better; respiration was much relieved. Death however ensued at 2 A. M. of 13th. nineteen hours after the onset of the disease.

Autopsy, 13th, 10 A. M. eight hours after death.—Frame large and well-formed; face cold as before death, but heat of the body and thighs well preserved; cadaveric rigidity in the arms, none in the inferior extremities; lividity on the internal and upper part of the thighs.

Cranium.—No sub-arachnoid infiltration; pia mater moderately injected; cerebrum soft, of ordinary coherence, not injected; cortical substance evidently darker than in the natural state, being of a livid pink nearly uniform throughout; corpora striata much less dark; the colour nearly natural; several spots ("marbrures") of livid pink colour in the thickness of the white substance; none of these marbrures spotted with blood; tuber annulare flabby, livid, of small volume; me-

dulla oblongata firm, of usual whiteness; cerebellum in consistence, colour, &c. like cerebrum.

*Semilunar ganglion* tolerably voluminous, gray externally, less so in the interior where are seen white spots; it is one and a half lines in thickness in all points; par vagum perfectly healthy and white; superior cervical ganglion grayish and thin; mammæ much developed; that of the left formed of a multitude of grains separated by dense cellular tissue, furnishes a whitish liquid; right mamma of an unequal pink colour, granular like the left, less in size, containing a much larger quantity of very fluid lactescent liquid.

*Thorax.*—Pericardium healthy, moist, containing from  $\bar{z}$ ss. to  $\bar{z}$ j. of transparent serosity; heart of normal size, contains a large quantity of liquid black blood, in which are some ill-defined coagula of little consistence. *Lungs.* The left free in its whole extent, light, of a bright red externally, more deeply coloured internally, especially the upper lobe; a portion of the lower lobe has less consistence than the other parts, but is not hepatized; the right lung is free in its whole extent; it is contracted on itself, and is of a pale pink colour; the inferior lobe is precisely like the superior of the left side. *Abdomen.* Great epiploon, slightly moist and viscous, covering the small intestine in its whole extent. *Stomach*, at least one-half larger than natural, much distended by gas, and containing a moderate quantity of dark green yellow mucus; internal face of stomach in its superior two-thirds of an unequal livid pink; in its pyloric third more or less yellowish and grayish, lightly dotted with red; in its posterior face, with the exception of the extremity of the great tuberosity, a similar appearance is presented, and immediately to the left of the small curvature, the yellow becomes tolerably intense; the membrane is mammillated in the third near the pylorus; more evidently along the large curvature than in any other part, and especially in a part of the posterior face near this curvature, about an inch square; the mammillation is caused by rounded elevations, a line or less in diameter, lilac at their circumference, but with a white or more rarely a livid red point at their centres; between the elevations just described, and separated from each other by spaces of one-fourth to a millimètre, are small rounded spots, or little longitudinal depressions, resembling the incision of a sharp instrument; this appearance is probably only an advanced state of the red pointed injection described near the pylorus; a large number of these spots are lilac at their circumference and whitish at their centre, but they are confluent in the space of two inches and without central points; these spots last described, on careful inspection, were seen to be still more

numerous on the anterior face of the stomach near the pylorus, and sometimes three or four were united, and projected beyond the ordinary level, the projection being most evident where the mammillation was most marked; a surface of about four inches on the anterior part of the stomach near the pylorus was also mammillated; the mucous membrane was a little injected in its thickness in its whole extent, the thickness greater near the cardia than in other points; duodenum similar to the jejunum; some crypts were there visible.

*Small intestine* very moist externally; slightly tympanitic in the first half of its extent nearest the stomach, containing besides a certain quantity of gas, a grayish, turbid liquid, sufficiently fluid, holding in suspension a great number of light yellowish flocculi, not homogeneous, but composed of filaments more or less flattened and more or less united external colour of intestine grayish, and violet red; internal aspect of same appearance; in the first three feet of the jejunum the crypts of Brunner are numerous, placed near each other, and of the size of a grain of millet; afterwards they are not observed until they reappear at the beginning of the ileum, in the whole extent of which they are very numerous, much more so than in the jejunum, and their number greatly increases as we approach the cœcum; their ordinary size is that of a grain of millet; they are of a whitish colour without central point. These crypts are often confluent, distant from each other from one-fourth to half a line; where they are closest, the membrane is manifestly thicker than in the natural state and proportionably more so in the last part of the ileum than in the last portion of the jejunum. The mucous membrane is of good consistence in the whole extent of the ileum; in the first three feet of the jejunum, strips of only two to three lines in length are obtained; its consistence is normal in other points. Some mesenteric glands, corresponding with the commencement of the jejunum, are more or less violet in their whole thickness, their size that of a kidney bean; others answering to the last part of the ileum were similar in appearance; some glands of Peyer were observed, but they were but little apparent on account of their violet red colour; their size was proportioned to the volume of the intestine, but scarcely projected beyond the neighbouring parts; a lumbricus was found in the second half of the small intestine.

*Large intestine*, slightly enlarged in the first part, and contains a sufficiently large quantity of a flowing liquid, yellowish and turbid as if puriform; mucous membrane of a pale white throughout; thickness normal every where; strips of twelve to fifteen lines in the two extreme thirds, less in the intervening space; no crypts visible.



*Liver* dry; gall-bladder shrivelled, containing a little very dark and moderately fluid liquid. *Spleen* softer and more easily penetrated than natural. *Kidneys* healthy, a little violet. Urinary bladder very small, containing a little thin milky fluid, injected in the inferior fundus; the membrane natural in other parts. *Uterus* small, ovaries voluminous. C. W. P.

**CASE VIII.**—Salle St. Paul, No. 33. Service of M. Andral. Baire, ætat. thirty-eight, a cook, living Rue Copeau, No. 22, was admitted to-day at 7½ A. M. Was perfectly well the morning of the 15th—in the afternoon was much alarmed and agitated upon seeing the porter of the house in which she lived, die suddenly of the prevailing malady; she was seized immediately with chills, trembling of the limbs, followed soon after with diarrhœa—the dejections were numerous through the succeeding day, (16th,) but did not prevent the patient from following her occupations. Early in the morning of the 17th, great augmentation of diarrhœa, violent vomiting and cramps.

8 A. M. Present situation.—Face cold, colour violet, limbs cold, covered with a clammy moisture; eyes sunken in the orbits, encircled by a dark blue line; immobility of the features; mouth half-open; voice completely extinct; tongue cold, moist, and white. No pain in the abdomen; dejections resemble rice water, in which are white flocculi. No radial pulse—that of carotids 130, extremely feeble. Respiration 28, costal; intellect perfect.

Treatment. Sinapism to the abdomen, frictions with ammoniacal ointment on the limbs, blister six inches square between the shoulders. Lemonade for drink.

6 P. M. Face of the same colour as this morning, cool; nose very cold; body slightly warm with clammy sweats; arms warmer than in the morning; eyes half-closed, the pupils turned upwards, showing only the lower portion of sclerotica. Respiration 33, its force increased; has not vomited; stools involuntary; intelligence unimpaired.

*April 17th, 7 A. M.*—Expression that of extreme anxiety; face cold; eyes surrounded by dark blue line, not injected; skin of limbs cool. Tongue dry, slightly red; continual thirst; has not vomited since yesterday. Pain in the abdomen; radial pulse almost imperceptible; hands violet. Carotids have 120 pulsations per minute. Respiration 32. Little urine.

R. Continue the external application of yesterday.

4 P. M. Face is better; coldness diminished, though the nose is

still like ice. Skin dry; has had no vomiting; two dejections. No urine; complains of colic; tongue is red at point, and is thickly covered elsewhere with a white coating; colour of hands is a deep violet. No radial pulse. Respiration 33, slightly costal. Intelligence good.

*April 19th.*—She was pulseless and delirious; skin of extremities cold, but the expression of the countenance did not resemble that of the ordinary choleric. Death at 11½ P. M.

*Autopsy, 20th of April, 8½ A. M. nine hours after death.*—Frame well-formed; body somewhat inflexible; surface slightly marbled with violet.

*Cranium.*—Vessels of the dura mater distended by blood, in other respects the membrane was sound. No arachnoid infiltration; vessels of the pia mater not more injected than usual; in colour and consistence the cerebral substance and cerebellum were normal, but were rather more injected than usual. The rest of the nervous system was not examined.

*Thorax.*—*Pericardium* dry, in other respects healthy, contained no serosity. *Heart* quite warm, contained a considerable quantity of liquid blood, in which were seen clots of a small size, which offered the same deep black colour of the blood. The texture of the heart, and that of the lining membrane, of proper consistence, though their colour is much paler than usual. Heart of normal size. *Lungs* crepitous throughout, presenting only a slight engorgement posteriorly.

*Abdomen.*—*Stomach* contains a considerable quantity of yellow, frothy liquid, which adhered to its internal face, and resembled mucus. Near the pyloric orifice the posterior surface in the extent of several inches was shrivelled or wrinkled—the mucous membrane covering these wrinkles was deeply injected, yet of good consistence. In the great cul-de-sac, the mucous membrane was of a whitish colour, and of its ordinary consistence and thickness. Along the small curvature it presented a punctated redness, retaining in other respects its natural character; near the pylorus, on the anterior face of the organ, the mucous membrane offered an uneven or mammillated surface for the breadth of three fingers. The stomach of its natural volume. *Small intestines* presented an augmentation of volume in all its extent, and contained a considerable quantity of yellowish liquid matter, mingled with flakes of mucus. In the commencement of the last half, this matter became whiter, and afterwards assumed a reddish tinge. The internal surface of the small intestines throughout its extent was deeply injected with blood to the extent of about a foot and a half above the ileo-cæcal valve; the usual vivid red colour of the mucous surface was interrupted by trans-

verse bands of a brownish-red, formed by the partial thickening, softening, and infiltration by blood of the mucous membrane at those points; this infiltration is so considerable, that the blood was easily forced out by slight pressure. The sub-mucous cellular tissue was permeated by an infinity of blood-vessels, and throughout offered a reddish tinge; it was moist, and the mucous membrane was readily detached from it. Of the glands of Peyer, eight were observed, having the average dimensions of three by ten lines; they were of a deep red granulated aspect. In the small intestines were found two lumbrici, and several inches of tænia.

The *large intestine* voluminous, and was filled with a liquid in consistence and colour resembling the dregs of wine, in which were found four large lumbrici, a few hydrocephali, and some fragments of tænia. The mucous membrane of the cœcum and colon was of a violet redness; that of the transverse colon whitish; in the descending colon there were several spots of a deep black colour, which seemed the product of a sanguinolent infiltration of its tissue; three similar ecchymoses existed in the rectum. The *liver* was of a dark brown, and of its ordinary consistence and volume, and contained a considerable quantity of blood, especially in its large vessels. *Gall-bladder* was distended by bile of a deep green or black hue, which also filled the biliary ducts. The *vena porta* distended by blood.

*Spleen* somewhat longer than usual, being five by three inches in its dimensions; its consistence good. *Kidneys* small, contained a small quantity of lactescent liquid; otherwise apparently healthy. *Bladder* contained about ℥iij. of urine, in which swam a quantity of mucous floculi. The mucous membrane of its fundus was considerably injected.

*Ovaries* of double their ordinary size, and filled with black coagulated blood. *Uterus* in the natural state, with the exception of being somewhat larger than usual.

Autopsy furnished by Dr. COOKE, of Virginia.

CASE IX. Salle St. Charles, No. 4. Service of M. Louis. Magnot, ætat. sixty-nine, washerwoman, entered April 14th, at 10 A. M.—Onset of disease last night at midnight, but she has had diarrhœa for the last three weeks, affecting her only in the night, and obliging her to rise about three times? For the last seven days she has felt herself considerably indisposed, and last night the stools were much augmented in number, she had no vomiting and no pain before entering the hospital, excepting very slight cramps, thirst very intense, feeling of coldness during night, attributed by the patient to her rising in the cold. Voice feeble, especially within a few hours, com-



plaints of general feebleness; urine constant; limbs cold on arrival—since frictions are warm; alimentation insufficient during winter, lives in a chamber badly warmed. Actual state, 5 P. M.—Face cool, slightly moist, not violet; arms cool, very moist; inferior extremities dry; temperature more elevated than in natural state; eyes hollow; eyelids half-closed; sight obscure, often double; lips violet; hearing good; no cephalalgia, nor feeling of heaviness in head. Aphonia almost complete; tongue violet, cool, very moist; thirst intense; no nausea after drinking; no pain in epigastrium; feeling of pain in abdomen, resembling the cramps of extremities; urine involuntary; throws her arms out of bed, in consequence of her *feeling* of heat. Pulse eighty-four, regular, very small, easily counted. Respiration thirty-two, a little costal. R. Enema of flaxseed, frictions.

15th. Dead at 7 A. M.

*Autopsy, on 16th, at 10 A. M. twenty-one hours after death.*—Skeleton well-formed; moderate embonpoint; lividity of upper and lower extremities.

*Cranium.*—A great quantity of blood was found externally to the dura mater, generally resulting from rupture of the longitudinal veins; arachnoid very moist, considerable infiltration beneath it; pia mater injected; cerebral veins distended; substance of brain very moist; 3v. of serum found in the right ventricle, clear and colourless; in left there was rather more. Cortical substance and corpora striata of their natural colour, and the cerebral mass in general of good consistence. Cortical substance of the cerebellum was pink, slightly violet, other parts were healthy, with the exception of a little injection of the medullary substance.

*Thorax.*—Pericardium healthy. Heart at least two-thirds larger than natural; this increase was derived entirely from the increase of the left ventricle, the walls of which were an inch in thickness, but its cavity rather diminished than enlarged. The semilunar aortic valves were healthy, except in their adherent portion, where there was a small induration of the thickness of a millimetre. A moderate quantity of liquid blood containing some fibrinous coagula was found in the cavities of the heart. Left pleura healthy; a little moist, and viscous, free from adhesions. Lung of same side was light, emphysematous in its whole extent, and in the posterior and inferior part was a little tumour of the size of a kidney bean, formed by these dilated vesicles. Right pleura was in a similar state with the left, but the lung was larger, lighter, of a pink colour throughout, emphysematous only in its inferior lobe, and without engorgement of blood.

*Abdomen.*—Stomach large, one-half larger than in the natural condi-

tion, it contained a tolerable quantity of a light green liquid, in which were suspended a number of mucous flocculi of a deeper green colour. The mucous membrane was of a reddish colour, in its whole posterior part of a deep red as also in its great cul-de-sac near the cardia, where the red colour seems to arise from a multitude of points more or less confluent. On the anterior face of the stomach near the large curvature, the red colour was not so deep, especially in the space of five or six inches, about two inches distant from the pylorus. The membrane was not mammillated. The thickness and consistence of the membrane are natural, except on the posterior face near the great cul-de-sac, where it has merely the consistence of mucus, augmenting again in approaching the pylorus where it is natural. The *small intestine* was a little larger than natural, and tympanitic throughout, it contained a grayish-red liquid in the first part of it, then a perfectly red one as fluid as water. In the liquid were some mucous flocculi, grayish and brown, floating in water, and at first sight, looking like moss. The colour of the internal surface of the intestine like the exterior, was pink in its whole length. Some glands of Brunner, much scattered, a little less than a millet seed, were observed in the first four or five feet of the intestine, afterwards they became more numerous, and not larger than a mustard seed, except in the last three feet, where their size was the same as in the beginning of the jejunum. The membrane was every where of its natural thickness even in the jejunum, and yielded on traction strips of six to ten lines, its colour was *pale white*. The sub-mucous cellular tissue is more or less injected in the whole length of the organ. The glands of Peyer were very visible in the last half of the intestine, from their white colour, which contrasts strongly with the adjacent parts, these glands are not sensibly thicker than usual. The *mesenteric glands*, were generally small except five or six, which were of the size of a kidney bean, and of a pink colour, but of good consistence. The *large intestine* was a little distended in its first half, where it contained a considerable quantity of reddish, turbid, but very fluid matter, afterwards assuming a still redder tint, until in the last fourth, where it was of a decided red. The mucous membrane was white in its first third, but shaded with red patches—the last five feet were of an amaranth red. It yielded strips of eight or ten inches, and was consequently of good consistence, except about the beginning of the transverse colon, where the strips were but six or eight lines, where the membrane is also a little thickened. The sub-mucous cellular tissue partakes of the same colour with the mucous membrane. The *liver* was of good size, and moist externally, much more easily penetrated by the finger than in the natural state;

the large lobe intensely red, and gorged with blood. The gall-bladder was distended, by a considerable quantity of grayish-green fluid. The *spleen* healthy, of usual size. The *kidneys* were of the natural size and colour. The *bladder* as large as an ordinary pear, the walls were in contact, and covered by a little yellowish white creamy matter, of the size of a hazelnut. *Uterus* small, containing no liquid, internally violet red. The *aorta* contained a tolerable quantity of blood, natural appearance. *Semilunar ganglion* grayish externally, and grayish and whitish internally. *Par vagum* white and healthy.

W. W. G.

CASE X. Salle St. Charles, No. 15. Service of M. Louis. Ducaigne, æt. 56, a workwoman, living Rue Traversine, twelfth arrondissement, entered ninth instant. Has been ill four days, preceding which she had cephalalgia at intervals. Onset of the malady by pain of the limbs; feeling of weakness forcing her to keep her bed; chills between the shoulders, followed by unnatural degree of heat, and accompanied by diarrhoea and slight colic. The diarrhoea has been constant; dejections of a matter of a yellow colour, clear, liquid like water; the number of evacuations at least twenty in the twenty-four hours; vomiting commenced on the second day, patient attributes it to drinking an infusion which was administered to her; quantity vomited always greatly exceeded that of the liquid which she drank; the matter of ejections a black fluid of a bitter taste; the colics became much more painful on the second day, and still continue; slight perspiration during the second day; almost complete suppression of urine since same period; voice most changed on third day after debut, less since.

On the third day of sickness took a glass of bad wine, which was not vomited. Treatment on entrance, 9th June. Enema of infusion of flaxseed with ℞j. of laudanum; friction.

April 10th, 10½ A. M.—A little better than yesterday; face of ordinary temperature; lips of good colour; sight good; eyes of natural brilliancy; hearing good; no ringing in the ears; slight frontal cephalalgia; intellect unimpaired; temperature of surface natural; colour of skin of body universally good; forearm a little marbled with violet colour; no cramps; tongue a little moist, of ordinary temperature; desires cool and sweet drinks; some nausea; oppression at epigastrium augmented by pressure; experiences no other pain at that point; rest of abdomen slight, dull pain; gurgling of intestines; abdomen tympanitic; tongue almost dry immediately after drinking; has had some dejections attended with pain since yesterday; respiration



slightly costal, and quick; pulse sufficiently large, regular, 100; voice a little suppressed. Treatment,  $\frac{1}{4}$  lavement of linseed with  $\mathfrak{Oj}$ . laudanum twice; lemonade; fomentations, and sinapisms to inferior extremities.

*April 11th.*—Dying at 7 A. M.

*Autopsy, at 4 $\frac{1}{2}$  P. M.*—Skeleton well-formed; moderate embonpoint; internal part of left thigh livid; lividity, but less marked on the lateral parts of the body; not cold; still warm on trunk and thighs; colour of muscles natural.

*Cranium.*—Blood very abundant on the external face of the dura mater; traces of slight sub-arachnoid infiltration; brain of normal consistence, slightly injected; cortical substance of natural colour; corpora striata of natural colour;  $\bar{3}$ ss. of limpid serosity in each lateral ventricle; pia mater a little injected; tuber annulare slightly softened, healthy in other respects; cerebellum natural.

*Semilunar ganglion* thin and grayish; *par vagum* of natural, white colour and thickness, offering, however, in some parts a ramification of bluish vessels; *superior cervical ganglion* grayish, of natural form and volume.

*Thorax.*—Two drachms of serosity in the pericardium; heart of good size, containing a quantity of liquid blood, in which float imperfect and very small coagula. *Lungs.* Left lung adherent in whole extent by close cellular adhesions; it is soft, red internally, without evident alteration; right lung free every where; upper lobe emphysematous, very light, perfectly healthy in other respects, containing a little blood.

*Abdomen.*—Stomach of natural size, containing some kidney beans, and a considerable quantity of greenish, viscid mucus, without other liquid; (many crypts observed in œsophagus;) internal aspect of the stomach universally grayish, spotted with red, a little dark in some points; mucus very adherent to the membrane in a part of the anterior face; mucous membrane very mammillated in the great cul-de-sac near the cardia, and evidently thicker than natural, yielding strips of two to four lines; no mammillation in other parts; mucous membrane of natural thickness and consistence upon the posterior face of the stomach near the cardia and the pylorus; near the small curvature is a slight, whitish, and opaque projection near an inch long, around which the adjacent portions of the membrane is radiated; the membrane covering this projection is thinner and more adherent than elsewhere—the elevation is caused by the thickening of the subjacent cellular tissue. *Small intestines* externally more or less gray in first half, red or livid in five or six last feet; a little

more voluminous than natural after commencement of the jejunum, containing in the first three-fourths a quantity of yellowish-green mucus; reddish mucus in the fourth, fifth, and in the last three feet a chocolate-coloured matter; internal aspect of the intestine in general that of the matter with which it is in contact; slight *arborization* of the mucous membrane in jejunum; in the middle portion of the ileum is observed a livid redness, which afterwards completely disappears, and is replaced in the last eighteen inches by a blackish-gray tint, which is unequal in colour; thickness of mucous membrane every where good; strips of three to five lines in first four-fifths rarely less or more; in last eighteen inches larger or smaller; *crypts of Brunner* numerous, and a little larger than millet seed in last eighteen inches; plates of Peyer universally healthy. *Large intestines* at least doubled in size; externally, colour of bluish-gray, containing a large quantity of gas; a liquid of a dark chocolate colour abundant in quantity in its whole extent; in this liquid was found a lumbricus of eight or ten inches in length; grayish flocculi like dregs of wine float in it; they offer no resistance to pressure, and are extremely soft; mucous membrane of cœcum of dark, livid red, unequally diffused; similar but less interrupted in ascending colon; in three-fourths of the first part of transverse colon colour natural; afterwards violet-red like that of the cœcum; in descending colon, and in a small part of the sigmoid flexure, and in the rectum, redness diminished—it is analogous to that of the subjacent cellular tissue, which is ecchymosed or infiltrated with blood in the reddest part; in texture the membrane is softened, muciform in cœcum; strips of two or three lines obtained—in colon of eight—in transverse colon, where colour is natural, ten to twelve—two to eight where colour is violet—one to two in the brownish parts of the rest of the colon; moderate consistence in the other parts. *Liver* of good size and healthy. *Gall-bladder* contains a tolerable quantity of very dark-green fluid. *Kidneys* of good size, a little pale in the cortical substance, in other respects healthy. *Spleen* scarcely larger than natural; reddish-black at lower extremity; suitable consistence in the whole extent. C. W. P.

CASE XI. Salle St. Paul, No. 17. Service of M. Louis. Dezot, æt. 62, living in the eleventh arrondissement, shoemaker, entered 15th, at noon; at 6 P. M. I saw the patient, and collected some particulars of his case; he was cold, much prostrated, livid, pulse insensible on left side, and upwards of one hundred on the right, but extremely feeble and difficult to count with accuracy. Respiration was thirty-eight, very costal; he was then vomiting a large quantity of a

transparent liquid, mixed with mucous flocculi; since his entrance he had vomited basins full; he was excessively prostrated, and the answers obtained could not be perfectly depended upon; still he seemed to refer the commencement of his disease to the day but one preceding his entrance. Visit of M. Louis, 16th, at 8 A. M. Patient states that he has had "a cold" since January, attended by emaciation. He has lived during the winter in a damp closet in the seventh story, immediately under the roof, and at times has absolutely wanted food. On the first day of his disease he had eight or ten watery discharges, with borborygmi, but without colics. Vomiting did not occur until the morning of the 15th, while upon the litter on his way to the hospital; it had however been preceded by nausea which was not caused by the drinks which he took. Cramps more violent in the inferior than the upper extremities, come on at the same time with the vomiting and have been repeated since his admission. The thirst has been intense, and the urine suppressed from the commencement of the disease. He has suffered from the sensation of cold during the whole disease, and on his entrance last evening, his face was cool and his nose cold to the touch. The respiration has never been impeded. Before his entrance he took no active medicine, and confined even his domestic remedy to sugared water. Since his admission he has taken a potion consisting of alcohol and laudanum much diluted, without vomiting; has had five or six stools since his entrance, but no perspiration.

Present state, April 16th, 8 A. M. The expressions of his face denotes fatigue; the eyes are moderately hollow but of their natural appearance; the cheeks are cold, the nose still colder, but the limbs and body of the natural temperature; perhaps a little lividity of the face; lips are violet; folds made in the skin of the neck are slowly effaced, and the same phenomenon was observed in that of the upper part of the chest, but in a less degree; sight was unimpaired until to-day, but now he sees surrounding objects as if through a blue medium; ringing in the left ear, which has existed for several days; intelligence perfect; voice feeble, but less shrill than yesterday; pulse eighty, feeble, regular, and less sensible on the left than the right side; respiration twenty-eight, high but equal; tongue cool, whitish at the sides, of natural colour at the centre, but dry; thirst, but desires tepid drinks; abdomen retracted; epigastrium sensible to pressure, and constantly painful; the sensation being compared to that of oppression, on inspiration; a similar pain but still more severe existed in the lower part of each side of the chest; five or six dejections since entrance; urine suppressed. Lemonade; injection of flaxseed;



potion consisting of ℥j. alcohol, ℥j. of syrup, and ℥vj. of vehicle—℥ss. every hour.

4 P. M. Cheeks a little cooler than in the morning; drowsiness constant but easily dissipated; sight troubled, but no blueness of objects; hands livid blue; feels more feeble; voice more disguised than this morning; pulse still very feeble, eighty-eight; respiration costal, twenty-eight; tongue dry and cracked, but not coated; epigastrium less sensible to pressure; no nausea, vomiting, cramps or stools; urine passed several times, and involuntarily. Continue prescriptions with frictions to limbs.

17th, 8 P. M.—The frictions were used as ordered with a brush, until he was warmed, and complained of their force. His face is now cold and livid, but less than the forearm; speechless, or uttering inarticulate whispers; no pulse; respiration very frequent; great dyspnoea; temperature of the abdomen is natural; stupor, lying with his mouth half-open; a strong rattle has existed during the last three hours; he has not vomited nor suffered from cramps; several dejections. Sinapism to thighs—alcoholic potion. Death in the night.

*Autopsy, at 8½ A. M. 18th April.*—Skeleton well-formed and moderately large; moderate emaciation, but little cadaveric rigidity; inferior extremities, especially the knees, were bluish and livid; muscles of natural colour and firm.

*Cranium.*—A considerable quantity of blood was found in the external face of the dura mater; moderate sub-arachnoid infiltration, and injection of the pia mater; at least two and a half ounces of serosity were found in the right lateral ventricle, and nearly the same quantity in the left; the septum lucidum was ruptured at its posterior part, but not softened; the whole encephalon was of good consistence; the cortical substance was livid, pink, and much deeper in its colour than ordinary; the corpora striata presented an analogous appearance; the medullary substance was injected in a remarkable degree, and besides marked with light lilac streaks; some hydatiform cysts in the posterior part of the choroid plexus; a slight effusion of blood was found at the base of the brain, about one or two lines in thickness, and between the sphenoid bone and the occipital foramen, no coagulum visible; the veins of the ventricles were distended with blood; cerebellum like cerebrum, was marbled in its medullary substance; nothing remarkable in the rest of the brain. The examination of the cranium was made at 3½ P. M.

*Thorax.*—The *pericardium* was universally adherent to the heart by slight cellular connexions; externally it also adhered to the left lung; heart was of moderate size, a little flabby, of normal thick-

ness of parietes, containing a quantity of liquid blood with some coagula of irregular form, besides a yellowish, fibrinous coagulum of moderate size in each ventricle; the *pleura* of the *left side* was healthy, except some partial adhesions; the left lung was grayish-blue externally, the upper lobe was slightly emphysematous, and the lower a little heavier than natural, containing much blood without globules of air, but not splenitized nor hepatized; towards the base of the fossa, which separated the two lobes, was a very elastic tumour of the size of a hen's egg, formed by a rupture of the vesicles of that part; only a few filaments remained, sinking as soon as the tumour was opened; the base of the tumour formed by the lung offered some flattened blood-vessels of large size, half a line in diameter; one or two of them were from a line and a half to two lines, opake, without valves, and terminating in the primary divisions of the pulmonary artery; no other lesion observed. *Right lung* partially adherent, heavier and more voluminous than the left; the inferior lobe was less elastic than that of the other side, granulated, and manifestly hepatized; the upper lobe was emphysematous upon its narrowest edge, but without projection of the vesicles, which are only increased to three or four times their normal size; in the summit of the lung there was an unequal, lobulated tumour, separated from the contiguous parts of the lung by a furrow of some depth; it was very elastic, as if formed by air, and semitransparent, but divided into lobular projections by little white lines, a third or a fourth of a line broad; upon cutting into the tumour it instantly sank, presenting at its base an appearance like that of the other lung, but without the vessels.

*Abdomen.*—The stomach was of small size, containing a moderate quantity of greenish-yellow mucus, tolerably adherent to the membrane, but without any watery fluid of any kind; the internal aspect of the stomach was grayish and reddish, uniformly diffused, except along the small curvature and in the great cul-de-sac, where the redness is very unequal, mixed with gray, and in spots. The membrane was mammillated along the large curvature within the three inches nearest the pylorus, and the same space adjoining the cardia; these portions were covered with a more tenacious mucus than the rest of the membrane; the thickness and consistence every where normal; and when the membrane was raised up it was evidently grayish, the reddish shade depending upon the injection of the sub-mucous cellular tissue. The small intestine was a little meteorized; its colour externally was grayish and reddish, but unequal, except in the last four feet, where it was green or bluish; it contained in its first half a yellowish-red mucus; in the second half, a turbid, very fluid and

abundant livid red liquid; the mucous membrane is similar in its general appearance to the exterior of the intestine; its thickness is normal; the strips yielded upon traction, are three to five lines long, except in the five last feet; in this latter the membrane itself is greenish, but in other parts it is white, or only a little injected, the colour depending upon the subjacent cellular tissue; this injection is most marked in the five last feet; glands of Peyer grayish, but scarcely visible; those of Brunner widely separated, found only in the five last feet, a little larger than a millet seed, near the valve they were rather numerous and a little larger.

*Large intestine* of ordinary size; contained a large quantity of a grayish-red liquid, not very fluid; the colour became deeper in approaching the rectum; the mucous membrane was of a grayish colour, at intervals slightly tinged with livid pink in its first third; grayish livid red in the eighteen or twenty inches which succeed, then grayish only, but afterwards grayish-red, except in the last two feet, which was brown, and exhaled a manifestly gangrenous odour; the last two feet were also marked with blackish-red spots of the average diameter of half a line, without manifest destruction of the membrane; the thickness in the first third of the mucous coat was a little increased, where it yielded strips of only one to three lines, and was slightly injected in its thickness in some points; after the first third it was thin, but less adherent to the subjacent tissue than usual, and the strips were at intervals longer or shorter without reference to the colour of the membrane; the submucous cellular tissue was incomparably more injected than the mucous coat; no crypts were visible. The *liver* was of the usual size, and offered in the upper part of the right lobe a yellowish, hard, encysted tumour, of the size of a hazlenut; the tumour looked like the matter found so often in the aorta of old persons, having the same semicrystalline appearance; some grayish-yellow spots in the upper part of the middle portion, which did not project beyond the surface of the liver, but penetrated into its tissue for the depth of five or seven lines, and were then lost in it without offering any difference of structure or consistence; the liver was of deeper colour than usual; its substance was finely granulated; the gall-bladder was distended by a large quantity of greenish-black fluid, which was moderately viscous; the spleen was of good colour and ordinary size, a little softer than natural; the *kidneys* were healthy and rather pale; the bladder was of the size of a small pear, containing a turbid, whitish fluid; the mucous membrane of natural thickness, but yielded strips a little shorter than usual; par vagum white, of



usual size; the *superior cervical ganglion* was whitish or gray, small and firm; the middle ganglion also small; semilunar ganglion was of moderate size, gray, in parts slightly tinged with pink, both externally and internally; the mesenteric glands were small, except in those corresponding to the last five feet of the intestine where they were larger and livid red.

This case and the three following present the complication of pneumonia, which frequently occurred towards the termination of the disease.

W. W. G.

CASE XII. Salle St. Paul.—Orsin Edmonds, æt. 52, pedler, living Quai et Isle St. Louis, admitted April 12th. His habits are temperate; general health good; his alimentation good, and has always used a certain quantity of wine at dinner. On the 9th of April, diarrhœa with constant gurgling in the intestines, with anorexia, and pain upon evacuation were manifested. At first the dejections were four or five in the twenty-four hours, but constantly increased in number. Yesterday, (April 11th,) at 5 P. M. sudden augmentation of the diarrhœa, attended with great feebleness, great thirst, cephalalgia, indistinct sight, and loss of voice. At 7 o'clock vomiting ensued, and an hour afterwards cramps came on, commencing in the feet and extending to the legs and thighs, and subsequently to the arms, but were much more intense in the lower extremities. Urine has been almost entirely suppressed since 5 P. M. At 5½ P. M. he was brought to hospital on a litter. Twenty-five leeches have been applied to the epigastrium, which have detracted a good quantity of blood.

April 12th, 10 A. M.—Present state. Face, even the central parts of it, of a natural temperature; countenance elongated; eyes a little sunken in the orbits; sight confused; hearing good; aphonia almost constant; (it momentarily disappears when the patient makes great exertion to speak;) suffers less from cramps since he has been rubbed and warmed by hot linen applied to the chest and abdomen; heat of the body natural in the upper and lower extremities; folds of the skin, (made by raising the skin between two fingers,) disappear very slowly as on the dead subject—(this is a constant symptom in true cholera;) skin is not livid; tongue somewhat moist, whitish, of a slight violet at the edges; intense thirst, desires cold and acidulated drinks, no nausea after drinking; breath cool; no pain in the epigastrium since application of the leeches, but previously the patient had experienced a slight lancinating pain; no stools the last two hours; the last which has been observed by us was a liquid, the general appear-

ance of which resembled that of clear, thin rice porridge or soup, with flocculi like the swollen rice; experiences slight colics upon going to stool; urine suppressed; no borborygmia; oppression since last night; pain in the right and left side during inspiration; pulse very weak, threadlike, difficult to count, 120; respiration twenty-four, somewhat costal; the patient feels very weak, and inclined to sleep; intellectual faculties perfect. Prescription—Lemonade,  $\frac{1}{2}$  enema of linseed decoction, with  $\mathfrak{z}$ ss. of laudanum (Sydenham's) every two hours, with frictions every two hours.

4 P. M. Patient feels better; suffers less on the sides of the chest; no vomiting nor head-ache; pulse 112, more developed than in the morning; respiration rather frequent; hands are warm; face is cold, without being very blue; no sensation either of heat or cold in the face; aphonia and suppression of urine persist with stupor. Prescription—Sinapism to the lower extremities.

*April 13th, 9 $\frac{1}{2}$  A. M.*—Natural heat of the body and extremities; temperature of the face natural except the nose, which is cold; less pain of the chest; aphonia diminished; sight good; some nausea without vomiting; respiration easy; three evacuations without urine during the night. Prescription—Lemonade,  $2\frac{1}{2}$  enemata of linseed decoction; emollient cataplasm on the pit of the stomach; friction of the lower extremities every two hours.

5 $\frac{1}{2}$  P. M. Face cold, particularly the nose; countenance without expression; lower extremities pretty warm; folds of skin disappear slowly; almost complete aphonia; hearing and sight good; no head-ache; no vomiting; gurgling of intestines easily determined by pressure of the abdomen; three dejections during the day; slight coma almost constant. Sinapisms to lower extremities; frictions every hour.

*April 14th.* Morning visit. Expression of countenance same as yesterday; upper extremities cold, but not changed in colour; integuments of the thorax of livid colour and violet; no sense of pain anywhere, except in the abdomen upon pressure, which immediately produces borborygmus; tongue very moist, yellow and cold; no thirst, obliged to force him to drink; no vomiting or stools; no urine. Prescription—Tea as drink, composed of infus. of tilleul and orange-flower water,  $\mathfrak{z}$ iv. alternately with alcohol,  $\mathfrak{z}$ ss. administered in table-spoonful dose every half hour.

Death at 3 P. M.

*Autopsy, eighteen hours afterwards.*—The frame is well-formed; the face and the lower extremities of an unequal, (marbled,) violet colour; the subject is not very fat; cadaverous rigidity not very re-

markable; body quite cold; muscles of normal consistence and colour. . .

*Cranium.*—Considerable sub-arachnoid infiltration of a red serum; pia mater injected; substance of brain also injected, and remarkably soft; cerebellum pale externally, medullary matter of violet colour;  $\frac{7}{8}$ ss. of serum in each lateral ventricle.

*Pneumogastric nerves* sound in regard to thickness; presented some violet spots on exterior surface, which did not exist internally. *Superior cervical ganglia* of middle size, gray, very dense. The *semilunar ganglia* grayish in their entire substance, thin, and very firm.

*Thorax.*—The pericardium, viscous exteriorly, very moist internally, but without serum; heart full of a large quantity of blood in part coagulated; the blood of the right auricle forming an enormous black clot; heart a little larger than ordinary, due to a slight hypertrophy of the left ventricle, the parietes of which are very firm.

*Lungs.* The left lung adhered in a part of its extremity—its upper lobe light, and of a vivid red, but sound; the inferior lobe heavy, of a deep red, containing a small quantity of blood; its texture is not granulated as in pneumonia, but as if splenified; on the right side less adhesions than on the left; upper and lower lobe equally heavy; the upper hardened and granulated, hepatized, black in part of its extent; the lower of the same colour, not granulated, but splenified; both lobes offer a small quantity of blood mixed with air.

*Abdomen.*—Stomach of the middle size, containing a moderate quantity of a limpid, green liquid, in which are flocculi of mucus of the same colour, whilst others adhere in a slight degree to the corresponding mucous membrane. The mucous membrane presented some red spots here and there in all its extent, more along the small curvature than in any other part, offering an imperfect mammillated appearance. In the vicinity of the pylorus, it is more or less injected in all its substance; it is of normal thickness and consistence in all its extent, with the exception of the great tuberosity near the cardia, where it is somewhat thicker than natural, and presents the mammillation pretty well characterized.

The small intestine gray and red externally, containing a yellowish, thick mucus, abundant in the first half; the mucous membrane is more or less injected in all its extent, particularly in the three first feet of the ileum, much less afterwards; it is of natural thickness in all its extent, giving strips of six or seven lines in length in every part except in the four or five last feet; in the parts where it is less injected the strips are from two to four lines, and in the parts where



it presents nothing remarkable the strips have less extent; Brunner's follicles less in size than a grain of millet, are numerous in the four last feet of the intestine, increasing in number and volume as we approach the lower extremity near the cœcum; Peyer's glands are scarcely visible; mesenteric glands are of a small volume generally, except two or three near the jejunum and liver, which are of the size of a kidney bean.

The large intestine of a natural volume, containing a small quantity of a white liquid, slightly grayish, in which are suspended some mucous flocculi; the mucous membrane is grayish in all its extent, interspersed with spots, some of a livid rose colour, others very red, particularly in the ascending colon and rectum; some follicles with a central point in the entire extent of the intestine, and are placed ordinarily near each other; the mucous membrane throughout of natural colour and consistence, except in cœcum and in the beginning of the colon, when the strips are not more than one or two lines in length. In the rectum are three green spots separated from the rest of the membrane by a narrow furrow; the parts near this furrow are of an intense red; the membrane is a little thicker than in the neighbouring parts; it is green in its entire substance, and has a gangrenous odour.

The *liver* moist externally, of normal size and consistence; redder than in the natural state and containing an unusual quantity of blood; the gall-bladder distended by a great quantity of bile, of a blackish-green colour. *Spleen* large, but sound. *Kidneys* of a livid colour, but of natural consistence and volume. *Bladder* contracted; contains a small quantity of thick urine; the mucous membrane sound.

CASE XIII.—Salle St. Paul, No. 17. Service of M. Louis. Galopin Pierre, aged sixty-nine, cooper; Barrière of Fontainebleau, No. 4, 12th arrondissement; widower. Entered 19th of April, 9½ o'clock A. M. Previously to the 14th, he was in perfect health, he was then taken ill, but became much worse on the 19th, at 3 A. M.

He passed the winter in a sort of vault, six feet deep, sleeping upon straw; lately he has lodged in a garret, but with a sleeping place of the same materials. His food has been scanty, he has passed whole days without eating, but at times he has committed excesses. On the 14th he was taken with diarrhoea, which has persisted with a little diminution, in the first twenty-four hours about fifteen evacuations; he had no colics, but much borborygmus. The appetite slightly diminished from the commencement. At three this morning, commencement of cephalalgia, he was seized at the same time with very

painful cramps, which commenced in the lower extremities, and then attacked the upper, but less severely, and simultaneously with vomiting, at first of a bitter matter, but afterwards of an insipid liquid. The thirst became very intense, but it had existed since the 14th; the urine also was still abundant. Feebleness of the voice occurred for the first time—a feeling of oppression which came on then, has since diminished. Chilliness was perceived for the first time, during the night. No sleep.

19th, 11 A. M.—Eight hours after the commencement of the grave symptoms. Expression of face natural, excepting an air of stupor; the lips are blue, and the rest of the face slightly livid. The nose is cool, cheeks a little warmer; the neck is of good temperature; the folds of the skin are there slowly effaced, on the chest they quickly disappear, but on the arms very slowly—forearms a little cool. The right eye, which is the only one remaining, is not evidently excavated. Frontal cephalalgia. Sight troubled at present, last night surrounding objects seemed bluish; hearing good. Voice extremely feeble. Yawns continually, but does not appear anxious. Pulse 72, small, feeble, and occasionally irregular. Respiration 18, moderately costal; air expired warm. Tongue tolerably moist, of good temperature, and whitish. Thirst intense, he prefers sour drinks of the temperature of the air; drank some lemonade before us with pleasure, and without nausea. Vomited soon after his entrance a reddish liquid, at the bottom of which were some mucous flocculi, of similar, but deeper colour; the redness was owing to a little pure wine, which he had taken before leaving his house, the wine caused no nausea, or other immediate uneasiness. No alvine discharge, and no urine since his entrance. Severe and frequent cramps in the feet exciting contortions of the face from their pain. No oppression or pain in the epigastrium, or in any part of the abdomen, but after taking the lemonade, he complained of a cramp confined to a small part of the epigastrium, and apparently muscular. Ordered frictions every two hours—sinapisms to inferior extremities. Iced lemonade. One-fourth enema of flaxseed, with  $\mathfrak{zj}$ . tr. opii, every two hours.

5 P. M. Complains bitterly of the pain caused by the application of sinapisms to his thighs for half an hour, they were removed just before the visit; in continual agitation. The sinapisms were each twenty-four square inches in extent, and have reddened the skin; however, in the midst of his pain he is gay, and jests with the nurse. Vomited twice since the morning, the first fluid was still reddish, the second yellowish-red, was abundant, and contained much light mucus in suspension. Two dejections, not copious, and consisting

of a gray liquid, slightly tinged with green, containing much mucus in small flocculi, but much smaller than those in the matter vomited. No urine. Cramps increased, both in the upper and lower extremities, in spite of the frictions which were repeated two or three times. Hands are cool; face same state as in morning; temperature of trunk natural. Pulse very small, 80, regular. Respiration frequent, and proportioned to the anxiety of the patient. Tongue whitish and cool; intense thirst; no nausea after drinking. Some *twisting* pain near the umbilicus since the application of the sinapisms.

Continue frictions. Cataplasm to the thighs if pain continue.

20th, 8 A. M.—Soon after the visit of last evening, the pain from the sinapisms became tolerable, but it has not yet entirely ceased, and the skin is red, hard, and elevated in that part. He has not vomited. The dejections were numerous, but small, so that in the whole they fill one-fourth of a basin, they are liquid, greenish-yellow, and at the bottom are some mucus and yellow fragments like faecal matter. Urine passed, but not abundant, no heat in voiding it. Abdomen retracted without pain. No cramps. Respiration 16, a little costal. Pulse 80, regular, without particular characters. Nose rather cool, less so than yesterday; temperature of rest of the body natural. Less anxiety, some disposition to sleep. Little cephalalgia; hearing good; folds in the skin of the neck slowly effaced. Ordered Seltzer water iced, sol. syr. gum.;—half enema of flaxseed, twice. Diet.

4 P. M. No nausea, vomiting, or cramps. No urine. Two stools of yellowish liquid, containing many mucous flocculi. Much prostration. Temperature of the face natural, except the nose, which is cool; rest of the body natural. Attitude relaxed. Thighs at least as red as last evening; the traces of the pressure of a finger remain visible for some time, from their paleness and depression. Pulse 80, rather small and weak. Respiration 22, rather costal. No pain at the epigastrium, but a little at the umbilicus on pressure, no borborygmus. Ordered antispasmodic potion, ℥v. with ℥ij. alcohol, and ℥j. of syrup of orange peel.

21st, 8 A. M.—Stupor almost constant, dullness of intellect, without delirium. Temperature of surface in general a little higher than natural, except the left cheek and nose, which are cool. Skin inflamed by sinapisms, is still sensible, and harder than the neighbouring parts. The folds of the skin of the neck are very slowly effaced. Voice not extremely weak; severe feeling of oppression at the epigastrium only. Pulse 84, regular, full. Respiration 22, elevated. Tongue white at the edges, yellowish at centre. Thirst; anorexia;



no cephalalgia, cramps, or vomiting; constipation. Urine suppressed. Ordered; sol. syr. gum. iced, two pots. Antispasmodic potion with ℥j. syrup of white poppies, and eight drops of ether, ℥ss. every half hour—one-fourth ration of broth diluted, three times.

Dead 3¼ P. M.

*Autopsy, sixteen hours and a half after death. April 22d.*—Frame large, well-formed; moderate embonpoint; some lividity in the internal part of thighs. The skin, where the sinapisms were applied, is thickened. Cadaveric rigidity considerable. Complete coldness. Muscles of good colour, and perfectly healthy.

*Cranium.*—External face of the dura mater covered by a large quantity of blood. The arachnoid was very moist; opake nearly in its whole extent, with universal and very considerable infiltration beneath it. Pia mater very moderately injected. Brain very moist, tolerably injected and firm. The cortical substance paler than natural; corpora striata of normal colour. At least ℥jss. serosity in each ventricle. Cerebellum, medulla oblongata, and annular protuberance without appreciable lesion. Spinal marrow of normal size and consistence in its whole length; the neurilema a little injected. The nerves arising from it offered nothing unusual, except a slight injection of their neurilema. Cauda equina healthy.

Larynx healthy. The œsophagus presented many crypts, especially inferiorly; the mucous membrane was every where firm, and covered by its epithelium.

*Thorax.*—The pleura of left side contains ℥ijss. of serosity. The inferior lobe of the left lung is heavy, firm, of a reddish-brown interiorly, light brown externally, adhering to the pleura in its whole extent; the superior lobe is light, not engorged with blood, but containing at its lower portion a great quantity of spurious blood. The inferior and middle lobes of the right lung are manifestly hepatized; the upper lobe natural. *Heart*, is much enlarged; contains a great quantity of blood, with reddish coagula in pulmonary arteries and veins. Parietal of the left ventricle, generally eight lines thick, in some places even an inch, the ventricula septum is unusually thickened; the muscular substance is very firm. The right ventricle has its walls of the normal thickness. *Abdomen.* Stomach of a large size, nearly doubled, containing a pint of a tolerably thick, yellow liquid mingled with mucus; a small quantity of mucus adheres to the great curvature at three inches from the pylorus; the exterior face of the stomach is of a moderately deep livid pink colour; the internal face in the middle two-fifths of its anterior part is similar in colour to the exterior; in the anterior superior part of the great tuberosity

the pink colour becomes much lighter; in this portion of the stomach are observed many white points either elongated or circular, the largest of which is not more than half a line in diameter, and none offers any perceptible prominence. In those portions where the pink colour is observed, the mucous membrane is evidently mammillated. Besides this coloration, red spots much more deeply coloured are seen in the whole extent of the small curvature, particularly at its superior part; these spots are sometimes confluent; the space which they cover is a breadth of two or three inches; below they are more rare, and occupy a much less extent; the mucous membrane is of the normal thickness, notwithstanding the great dilation of the organ, giving strips of two to three lines in the great tuberosity; four to eight in the great curvature, and from ten to twelve in the small.

*Small intestine* more or less tympanitic throughout its extent; colour externally universally reddish, and contains in its two first feet a tolerably large quantity of a yellow liquid, which is not very fluid; the liquid subsequently increases in quantity, and contains a large amount of yellow mucus; evacuating the intestine of its fluid contents a large quantity of mucus adheres to the membrane; the internal face of the intestine is paler than the exterior; the mucous membrane is occasionally injected with very fine ramifications, whilst the subjacent cellular tissue is universally so, though the colour is not so deeply red; where the tympanitic expansion exists the mucous membrane is a little thicker than in the normal state, and gives strips by traction of two to five lines, (friable) in all its extent, except in the last two feet, where the colour is of a green tint, and the strips are eight to ten lines long. Glands and crypts of Brunner observed in the last five feet of the ileum, increasing in size as we approach the cæcum, where they are of the size of a grain of millet, and distant from each other a line or less. Peyer's glands are not very apparent, of a reddish-gray colour, of a thickness greater than natural, but which is more sensible to the touch than to the sight.\* Mesenteric glands generally of a larger size than usual, being that of a kidney bean, and having ordinarily a violet-red colour—others are of a fawn colour.

*Large intestine* of medium size, containing a yellow matter, moderately fluid, and of a fæcal odour. The internal face of the cæcum and half of the ascending colon offer a grayish colour sprinkled with red spots varying in intensity, which are smaller but more numerous in the cæcum than in the first half of ascending colon; the other half of ascending colon and the transverse portion is generally of a light pink, afterwards the colour is a grayish-white; mucous membrane

of the cæcum and colon give strips of only two to three lines in length. *Liver* of good size, firm, coherent, externally and internally somewhat pale; this paleness is apparently greater, owing to the prevalence of pale gray spots. Gall-bladder filled with a yellow, turbid liquid.

*Spleen* rather over medium size, healthy. *Bladder* contracted to size of a moderate-sized pear, (bell-pear;) parietes have a thickness of three or four lines, slightly consistent, and contains a small quantity of thick, white liquid.

*Aorta* contains a great quantity of liquid blood; superior vena cava considerably distended with blood, thirteen lines, (English,) towards its upper part.

Semilunar ganglion slightly gray in its extent, and of a medium volume; the thoracic ganglion concurring in its formation, white and healthy; some venous ramifications are developed in all the branches of the par vagum of right side, otherwise it is healthy.

The upper and middle cervical ganglia of right side are elongated, fusiform, running into each other so as to present the appearance of but one ganglion of about three inches and three-quarters in length, and from one and a quarter to one and a half inches broad. Ganglia of left side of neck have their normal appearance. Phrenic nerve perfectly sound.

CASE XIV.—Salle St. Charles, No. 9. Service of M. Louis. Baulouvière, æt. 39, a seamstress, living in the Rue Mouffetard, unmarried. Entered April 18th, at 10½ A. M. Taken ill on the 17th, at 3 P. M. She had felt slightly unwell for a week previously, but only ceased working on the 17th. Food was frequently insufficient during the winter, and usually consisted of potatoes without meat or wine. Her room is dry but not warmed by a fire. For the last six weeks her food has been a little better than usual. During the week preceding her illness, her appetite had diminished; she had pain in the limbs, but no nausea, vomiting, nor diarrhœa. Within the last three days only she has felt some borborygmus, and during the epidemic nursed no patient, although she has seen a number. The disease began with *severe* diarrhœa, accompanied by frequent colics, which were most painful around the umbilicus; these pains invariably preceded the discharges; the dejections were *always* more or less yellow. Vomiting came on four hours after the diarrhœa, and was repeated eight or ten times: the matter was bitter, but white, without any shade of green. The cramps appeared with the diarrhœa, before the vomiting; at first only in the legs, but on the second day existing



both in the arms and legs, and much more painful than the colics, exciting loud cries. Urine suppressed since the commencement. Sight never impaired. Some tinnitus aurium. No chill at the beginning.

19th, 10½ *A. M.* Forty-three hours since the attack. The cramps were diminished by the application of sinapisms to the legs. She has vomited five or six times a matter composed of her drinks without peculiar taste. Two injections with laudanum were given which have been followed by no stool. At present there is a universal air of anxiety; the face is pale without lividity; the cheeks and nose were cool, the rest of the face of normal temperature; hands and forearms cool, and constantly uncovered by the patient; inferior extremities of normal temperature; she complains of no sensation of heat nor cold, but uncovers her chest and arms to relieve her oppression; eyes deeply sunken; sight perfect; hearing good; no tinnitus aurium at present; intelligence developed, and narration correct; aphonia, as from the beginning of the disease; respiration thirty-six, rather costal; pulse one hundred, very feeble and filiform, but easily counted; intense cephalalgia, but less than yesterday; frequent sighing and complains of feebleness; the folds in the skin of the neck are slowly effaced; sensation of oppression along the sternum and at the epigastrium, and at the latter a pain compared to a sort of pinching; tongue a little cool, moist, bluish, whitish in the centre; thirst, desiring cold and sour drinks, but rejecting them by vomiting soon afterwards; no colics nor dejections; urine suppressed. Seltzer water; sol. syrup. gummi; one-fourth injection of flaxseed, with ℞j. laudanum, twice. Cataplasm to abdomen.

4 P. M. Expression of face calm; coolness of the nose and left cheek only; arms and forearms of normal temperature, but hands a little warmer; aphonia; sight perfect; frequent hiccough; pulse one hundred, less feeble than in the morning; tongue less moist than usual, clear at the edges, but whitish in the centre; some sensation at the epigastrium, to which the cataplasm was not applied; vomited twice, but only the drinks she had taken; retained the only opiate injection she has taken half an hour, but no other discharges; no colics or cramps; suppression of urine. Sol. syr. gummi; Seltzer water; antispasmodic potion, with ℥j. syrup of white poppies, and ℥ss. orange-flower water.

20th, 7½ *A. M.* Since last evening one dejection with some urine; a little nausea and vomiting; no cramps; imperfect sleep; no perspiration; expression of face natural, without increase or diminution of temperature; upper extremities of natural warmth; pulse ninety-six,

small and feeble, but regular; tongue tolerably moist, clean, and neither livid nor red on the sides; thirst, with desire for cold and sour drinks; a little uneasiness at the epigastrium, compared to a sensation of weakness and without heat, but no pain upon pressure in any part of the abdomen. Sol. syr. gummi; iced Seltzer water; antispasmodic potion, with  $\bar{z}$ j. syrup of poppies, and gtt. iv. sulphuric ether; injection of flaxseed.

4. P. M. Ate an orange, swallowing the pulp about two hours ago; felt oppression at the epigastrium immediately afterwards, and vomited five or six times a transparent fluid mixed with the orange; before eating it one or two vomitings, but generally she felt much better and now regrets her imprudence; the potion was taken for the first time immediately after eating, without appreciable effect; at present, the feeling of weight at the epigastrium persists; a little hiccough, was dissipated by the vomiting; face warm, a little flushed, with expression of anxiety; heat of the rest of the body natural; cephalalgia; numbness in the hands, but no cramp; respiration twelve, high and interrupted by sighs; tongue moist, warm, white only at the centre; no urine, and but one dejection. Injection of flaxseed, continue potion.

21st, 7 $\frac{1}{2}$  A. M. After the visit of last evening, vomited twice portions of the orange, and afterwards a green fluid with thick mucus at the bottom; slept at intervals during the night; no hiccough until this morning, when it returned with less violence; no dejections or urine; a little subsultus tendinum in the right arm only; no cramps; face calm and natural, but the left cheek and nose are still a little cool; a little frontal cephalalgia; intelligence obtuse; pulse ninety-two, regular but small, and counted with difficulty; tongue moist, but yellow, and coated at the centre to a more considerable extent; a little appetite, asking for broth; no nausea; no pain at the epigastrium. Sol. syr. gum.—potion to be continued.

4 P. M. Stupor, sometimes but not always interrupted by applying the hand upon the patient; cheeks livid rose colour, and like the whole surface warm; folds of the skin effaced less slowly than during any previous visit; eyes remain half-closed; lying on the back, muscles relaxed, with general air of prostration; slight frontal cephalalgia; answers slowly to questions, but smiled when suspected of deafness; stupor returns immediately after replying; frontal cephalalgia; pulse ninety-two, characters same as in the morning; respiration fourteen, costal but regular; voice changed and slightly nasal, as in certain cerebral diseases; tongue less moist than usual; no pain in the epigastrium but uneasiness, as if from muscular fatigue, similar to those she

feels in her limbs, and in the abdomen; some tympanitis; pressure she assures us diminishes the pain in the abdomen; no information could be obtained as to her other symptoms. Fifteen leeches to the neck immediately; sinapisms to extremities; injection of flaxseed twice.

22d, 8 A. M. Extremely prostrated, moribund. Death at 2 P. M.

*Autopsy, 23d April, 9 A. M. nineteen hours after death.*—Skeleton well-formed, of middle size; very moderate embonpoint, lividity of the internal part of the thighs. Body perfectly cold, and rigidity of the muscles very great.

*Cranium.*—The external surface of the dura mater was covered by numerous drops of blood. A few drops of serum, only beneath the arachnoid. The pia mater was particularly injected in the sulci only. The cortical substance of the surface was paler than natural, that of the corpora striata was perfectly normal. The medullary portion was a little more injected than usual, and universally tinged with a delicate shade of lilac, but less deeply at the base than the summit; in a few small spots the colour was nearly natural. The consistence of the cerebrum was very good. Two ounces of serosity were found in each ventricle, a little less in the left than in the right. The cerebellum, annular protuberance and medulla oblongata were perfectly normal in appearance.

*Spinal marrow,* an ounce of serosity was found at the inferior part. The colour and consistence not apparently altered. The nerves arising from it presented nothing but some red lines externally, the result of the same slight vascular injection which existed on the neurilema of the medulla spinalis. The sciatic nerves were traced, but nothing was observed except the injection of their tunic. The phrenic and pneumogastric were traced through their principal subdivisions, but nothing observed. The semilunar ganglion was small, violet externally, and pale internally, very firm, and cut with some difficulty. The superior cervical ganglion was of the ordinary size, grayish, paler internally than externally.

*Respiratory organs.*—*Epiglottis* and *larynx* normal. The upper part of the trachea was of yellowish-pink colour; the fleshy part covered with mucus, but the membrane of normal consistence.

The left *pleura* was healthy, excepting some partial adhesions at the inferior part of the lung. *Lungs,* the left was not heavy, the upper lobe bright red posteriorly from engorgement, the inferior lobe, of a deeper red, with some points of manifest hepatization. The *right* lung was adherent in its whole extent, by bands of cellular substance which were readily broken; the upper lobe was lighter and less red than that of the left. The inferior lobe was slightly hepatized in some



points, and generally engorged, yielding upon cutting into it, an abundant red spumous liquid.

*Circulatory system.*—Heart was small, containing a moderate quantity of blood, with large and firm coagula. Pericardium perfectly healthy.

*Digestive system.*—*Esophagus* healthy, *stomach* contracted superiorly, and without liquid, the parietes covered by a little grayish-green mucus. In the anterior and superior face of the pyloric half, the mucous membrane was thrown into a large number of grayish-red unequal folds—these folds are longitudinal, the membrane between them of the same colour, but not so deep. In the rest of the stomach a similar colour is disposed in longitudinal bands, a line or two large. The membrane is not mammillated, presenting the ordinary villi. The thickness and consistence are natural throughout, but the mucous membrane is every where injected in its substance. The sub-mucous tissue rather more injected than the membrane.

*Small intestine* a little tympanitic, externally grayish with scattered vascular ramifications. In the first three feet, there was only a greenish mucus, afterwards a more fluid matter of the same colour but only mixed with mucus; the colour of the mucus became reddish in the ileum. The colour of the membrane was pale in general, but in some parts slightly rose, due in part to vascular ramifications in its thickness, but much more to the injection of the sub-mucous tissue. The thickness and consistence are every where normal. Only two crypts of Brunner were visible, these were in the three last feet, and scarcely larger than a grain of millet. The glands of Peyer were generally little developed and grayish, some dotted with blue. The mesenteric glands were very prominent, a little enlarged, but of good consistence, gray or violet.

The *large intestine* was distended by gas in its first half, and contained much fecal matter, greenish, more consistent in the rectum than in the upper, and with the characteristic odour, but not moulded into the usual form. The mucous membrane was grayish, or slightly tinged by the matter in contact with it, but without any injection. The membrane was thin, but not wanting in consistence. The subjacent tissue but little injected.

The *liver* was of the usual size, rather pale, flabby, finely granulated, and more easily penetrated than in the natural state. The *gall-bladder* was at least doubled in size, and contained a yellowish, clear liquid, mixed with a yellow glairy matter, which was detached with difficulty by washing. The internal membrane was of a deep livid red in about a third of its extent; yellowish-green in other parts;

the red portion was thicker than the rest, and presented larger areolæ, the membrane however is perfectly firm. The sub-cellular tissue is vividly injected. *Kidneys* of normal size, and deeper colour than usual, the calices and infundibula presented nothing remarkable. The bladder contained a transparent liquid, its membrane perfectly healthy. The uterus was enlarged, in consequence of the development of a fibrinous tumour in the posterior part of the neck, near the os tincæ, whose posterior edge is but a line in thickness, the orifice is open and the anterior edge a little thickened; the tumour is about two inches high, and twenty lines broad, opaque, white and shining.

This case is one of the most interesting instances of death, in the period of reaction. On the morning of the 20th, she was rather better than on the preceding days, but still suffering from uneasiness at the epigastrium; after eating the pulp of an orange, the vomiting was reproduced, the gastric uneasiness much greater; these symptoms are sufficiently explained by the deep injection of the mucous membrane of the stomach, but as the inflammation was recent, (less than two days,) and not violent, the thickness and consistence were unchanged. The diarrhœa had ceased some days before her death, and the intestines were found in a state of perfect integrity, with healthy fecal matter. The lesions of the nervous system consisted in the distention of the lateral ventricles, and the slight injection of the pia mater and medullary substance, with the peculiar lilac tint, which was not confined to the brain, but existed frequently in most of the organs; the unknown modification of the blood which causes it, may perhaps be one of the most important lesions in the disease. The inflammation of the lungs was not suspected during life, this complication was found extremely frequent in the secondary stages of cholera, but in the severer cases auscultation was rarely practiced from the extreme feebleness of the patient, in the milder, where treatment could be directed with this special view, it was detected by the usual exploration of the chest.

CASE XV. Salle St. Rosaire. Service of M. Andral. A woman named Viége, æt. 36, tailoress, living Rue Cloître, St. Bernardin, twelfth arrondissement, was admitted to-day at 8 A. M. She has been ill since the 9th, when she was taken with violent diarrhœa at 10 P. M. Vomiting succeeded almost immediately, and has continued. Cramps came on an hour after the diarrhœa, commencing in the calves of legs, extending to the hands, and returning at intervals. The vomiting consisted of a watery liquid.

April 11th, 8 A. M. Present state. Features immoveable; great prostration; eyes dull, sunken, and encircled by a dark line; face,

including lips, livid and cold; arms and feet cold; body warm; tongue pale and cool; thirst tolerably great; vomits, whether she drinks or not; pain in the whole abdomen, but particularly at the epigastrium; says she urinated last night? aphonia complete, requiring the greatest attention to hear her whisper; extreme prostration; pulse one hundred and twenty, very small, but easily felt; respiration costal, twenty-eight. R. Sinapism to abdomen, sprinkled with ol. terebinth.; frictions with liniment of cantharides.

*April 12th.* Intense colics; hands cold; no vomiting; some stools; tongue covered by false membrane. Death at 2 P. M.

*Autopsy, 13th, 8 A. M.*—Great cadaveric rigidity; moderate embonpoint; hands violet; muscles pale red.

*Cranium.*—Moderate injection of the veins of the dura mater; medullary substance of the brain moderately injected:  $\frac{5}{8}$  j. of serosity in left lateral ventricle; half that quantity in the right; pineal gland of the size of a large pea, containing some sandy matter; rest of the brain normal; semilunar ganglion and its dependences white and healthy; par vagum also normal; larynx and pharynx healthy.

*Thorax.*—Pericardium contained an ounce of reddish serosity; heart contained in the right auricle a large, soft coagulum, entirely colourless and infiltrated with serum; in the other cavities there was a small quantity of liquid blood; another coagulum of similar appearance was found in the left auricle and in the beginning of the aorta; the tissue of the heart was firm, pale red, and hypertrophied in the left ventricle; the aorta contained a black liquid blood, in the midst of which appear some small white coagula; internal surface of the aorta white; in the summit of the left lung were some tuberculous masses, surrounded by a pale, crepitating tissue; posterior part moderately engorged; the right lung contained some tubercles in the summit of its inferior lobe; its parenchyma as in the left lung.

*Abdomen.*—Vena portarum contained but little blood; inferior vena cava gorged with blood. *Stomach* contracted, containing a small quantity of greenish mucus, which covered the internal face of the mucons membrane; that membrane is white, slightly dotted with red points; in the anterior parts, the membrane is of good consistence; some scattered albuminous flocculi on the peritoneal tunic of the intestines; sub-cellular tissue considerably injected; three invaginations of small intestines, each an inch long; yellow mucus with a yellowish matter is found in the first part of the small intestine; in the two inferior thirds it is of a pale red, with white clots floating in it; still lower, these filamentous clots are alone, and



cover the intestine with a membraniform layer; in the beginning of the jejunum, a large number of the valvulae conniventes are of a bright red, between them, the membrane is rose-coloured, towards the end, however, the membrane in the intervals is pale; in many parts it is lined by whitish, membraniform fragments; this matter adheres intimately to the imperfect valves which occur in the ileum; no appearance of Brunner's follicles or the glands of Peyer.

*Large intestine* contained a fluid of a fawn colour, in large quantity; internal surface of cæcum and ascending colon of a brownish-red tint; this redness continues, but is less intense in the transverse colon; it then disappears, but is reproduced in the most intense degree from the descending colon to the rectum; membrane is covered by a puriform mucus, it is very soft, and yields a most fetid odour. *Liver* red internally and externally, of good consistence; gall-bladder distended by a deep black bile. *Spleen* five inches long, two broad, and one and a half high; livid red internally, and very firm. *Kidneys* normal. *Bladder* contracted, empty; no white matter in its cavity; uterus healthy; left ovarium dropsical, of the size of an orange; in the right ovarium was found some effused blood.

CASE XVI. Hôpital de la Pitié. Salle St. Paul. Service of M. Louis. A boy named Verbois, aged fourteen, a slater, taken sick this morning, April 10th, was received at 4 P. M. His habits are temperate, and his alimentation has been sufficiently good. Yesterday being perfectly well, he worked as usual, and slept well through the night. Onset of the disease sudden at 7 o'clock this morning; after breakfast, consisting of some bread, meat, and a portion of absinthe, he experienced great nausea, followed by vomiting; this was repeated twice. The matter vomited, consisted of the food which he had taken. Diarrhoea ensued half an hour after vomiting; the dejections have been very numerous, he has not had either cramps or cephalalgia, or tingling in the ears: sight and hearing unaffected. Voice has been changed since the onset, and thirst has been intense during the day. Was chilly during the morning, but for the last two hours the chills have ceased.

5½ P. M. Present state. Face cool, forearm and legs cold. Colour of the face violet, with the prominent parts of the cheeks livid. Eyes natural. Abdomen, with exception of the epigastrium, soft and yielding; he suffers no pain, except a feeling of oppression across the middle of the chest, increasing upon inspiration. Tongue violet, hurried, clean—has some nausea, but no vomiting. Pulse is very

filiform and frequent. No cramps. Urine suppressed for some hours.

Treatment. Friction every half hour to extremities, especially lower limbs. Warm sinapism to legs and arms— $\frac{1}{2}$  enema of linseed mucilage, with  $\mathfrak{Dj}$ . of laudanum every three hours, and  $\mathcal{R}$ . Antispasmodic potion,  $\mathfrak{Ziv}$ .; alcohol,  $\mathfrak{Zss}$ .; laudanum, (Sydenham,)  $\mathfrak{Zss}$ . M. Take of this mixture  $\mathfrak{Zss}$ . every three hours. Diet.

*April 11th, 8 $\frac{1}{2}$  A. M.*—Physiognomy natural, without lividity; heat of face natural, except the nose, which is cold. Voice very slightly altered. The heat of the surface of the body and limbs became equalized and reëstablished at 9 P. M. last night, after almost unremitted frictions for several hours. The antispasmodic potion was administered for the first time at 8 P. M. the first dose was vomited, the others were retained. The voice returned during the night; the vomiting and pain, or oppression of the chest ceased at 5 P. M. to-day. Urine is still suppressed. Diarrhœa is much diminished—momentary cramps in the hands, none in other parts. The extremities and whole body have a proper temperature. No pain in the abdomen or elsewhere; feels stronger. Expression of contentment and intelligence in the countenance; congratulates himself that his respiration is free and without pain. Pulse regular, small, (100.) Breath cool.

Treatment. Sol. syrup of gum.:  $\frac{1}{2}$  enema of decoction of flaxseed, with  $\mathfrak{Dj}$ . of laudanum every four hours. Frictions every four hours. Diet.

5 P. M. Countenance, temperature, and colour same as in the morning. Respiration slow, 12 per minute. Pulse 96; volume increased. Disposition to sleep, which is sufficiently tranquil. Urine has reëappeared.

Continue the medication.

*April 12th, 10 A. M.*—Has slept well; face and body of natural colour. Body of good temperature; face cool; some nausea; two dejections since yesterday. Abdomen soft, no pain on pressure. Expression of countenance good. Tongue slightly coated with white fur. Pulse 73, rather tense. Respiration easy. Nausea.

Continue treatment.

5 P. M. Somnolency—has slept during the day; appearance of narcotism; has vomited soup which was given him by mistake. Face red and injected. Mind sluggish. Pulse 68.

Treatment. Ten leeches to the neck.

*April 13th, 9 A. M.*—Disposition to sleep continues. Face warm

and red. Pulse 104, tolerably full and strong. Tongue is natural except at the point which is slightly violet; no pain in the abdomen which is insensible to pressure. Has had three dejections since yesterday, of a yellowish-green colour, of a pungent metallic odour, and of the consistence of very thin "potage au purée."

Treatment. Infusion of coffee, (coffee,  $\bar{\text{z}}\text{j}$ . to water,  $\bar{\text{z}}\text{iv}$ .) taken in spoonful doses each half hour: eight leeches to each side of the neck.

5 P. M. Has taken four portions of coffee—vomited after the two first portions, but retained two last: has had six dejections. Drowsiness less than this morning; the leeches drew a large quantity of blood. Face cool, redness much less; no cephalalgia. Tongue natural. Has desire for food. Pulse 112, weak, regular. Expression of face good. Allowed a small portion of milk.

*April 14th, 9 A. M.*—Says he feels as yesterday. Vomited during this night and this morning a clear, green liquid, containing numerous narrow, long flocculi. Has had three dejections similar to those of yesterday. Pulse 108, feeble. Heat of body and extremities normal; tongue very moist, violet. Thirst intense.

Treatment. Lemonade,  $\frac{1}{2}$  enema of decoction of linseed; sinapism to inferior extremities.

*April 15th.*—Feels better; vomited last evening a light greenish matter; has had eight dejections since. No pain of abdomen. Pulse rather feeble, 84, and regular. Liquid of dejection similar to that vomited.

Treatment. Seltzer water, solution of syrup of gum. Vermicelli and broth.

6 P. M. Asleep.

*16th.* Still doing well, vomited but once yesterday. Ate two rations of vermicelli and one of broth, without unpleasant consequences. Slept well. Appetite good; tongue nearly natural, slightly red. Abdomen well-formed, without tenderness—has had but one stool for last twenty-four hours. Temperature of body good.

Ordered Seltzer water—sol. syrup of gum—half portion of rice, one egg, and a small quantity of bread.

From this time the convalescence was rapid, and in a few days he was discharged perfectly well.

CASE XVII. Salle St. Charles, No. 11. Service of M. Louis. Gignot Françoise, æt. 59. workwoman, living in the fifth arrondissement, married, entered 15th, at 11 A. M. She has had a continual cough for the last seven months, and three months since profuse hæmoptysis, (vomiting she terms it,) the blood was coagulated, and the



hæmorrhage twice renewed, and amounting each time to more than half a pint. Since the same date, she has expectorated much tenacious sputa, and has suffered from pains in the sides of the chest and between the shoulders. Frequent chills within the last three weeks.

On the 14th, at 2 P. M. she was taken with a chill and trembling, cramps in the legs which continued with nearly the same violence last night, at the same time violent diarrhœa and vomiting of a glairy matter mixed with bile. Cephalalgia and tinnitus aurium also at the beginning. She has kept her bed from the commencement of the attack. Intense thirst, but no coldness of the surface.

*April 16th, 8½ A. M.*—Face a little violet upon the cheek-bones and nose. Face in general, but especially the nose, cool; hands cool. Folds of the skin are effaced as rapidly as in health. Pulse 92, rather small and regular. Tongue moist, natural temperature, a little coated at the centre. Thirst intense. Vomited twice since yesterday a glairy matter. Whole abdomen sensible, especially the epigastrium, which is even painful without pressure; the sensation is that of oppression mingled with lancinating pains, which extend to the back. Abdomen a little distended; frequent borborygmi, without discharges. Sputa greenish, not abundant. Percussion above and below the left clavicle; respiration frequent, at this moment cramps in the fingers and calves of the legs: ½ enema with ʒss. laudanum, twice. Antispasmodic potion, with gr. iss. acct. morph. Frictions to the legs.

*17th, 7½ A. M.*—No nausea or vomiting, no cramps, except at intervals during the night, in the right arm. Urine. Folds of skin effaced with nearly the natural rapidity. Pulse 84, regular, a little feeble; temperature nearly natural.

Pectoral mixture. Gum water—½ enema of flaxseed, with poppy capsules.

*5½ P. M.* One dejection after the enema. No cramps; slept since the visit. 2½ rations of diluted broth.

*19th.* Entirely convalescent from the slight cholera: on auscultation, found a subcrepitant rhonchus on the left side, posteriorly in a spot where she suffers acute pain since last evening. No alteration in the sputa. Leeches to seat of pain. Solution of gum. Cataplasma to chest.

*23d.* The slight pain in her chest a few days since, was dissipated by the leeches. Constipation for three or four days. Appetite—face still a little bluish. Urine abundant and pale. Potion of violets edulcorated. Solution of gum, with syrup of poppies. 2½ rations of rice.

The patient was now in her usual state of health: this observation is reported as briefly as possible, to show the little influence cholera

has upon the progress of pulmonary phthisis, nor are patients with tubercles at all more exposed to the disease, and certainly not affected with greater severity than other individuals in perfect health.

CASE XVIII. Salle St. Charles, No. 6. Service of M. Louis. Marie Nazon, æt. fifty-three, seller of confectionary, (pedler,) widow, living in the 12th arrondissement, Rue d'Arras. Entered April 18th, 11 A. M. Food during the winter consisted only of potatoes, legumes, and boiled rice, with a little meat once a week, even this simple food was occasionally wanting. Eight days before her entrance, she was taken with diarrhœa, which ceased after four days continuance; her appetite was diminished, but she was not obliged to cease her work, during the succeeding days the discharges were regular and quotidian, but her appetite and strength were still a little impaired. On the 17th, at 9 P. M. she was taken with a sensation of dizziness, severe diarrhœa, perhaps twenty discharges in the same number of hours, and violent colics in the umbilical region. Cramps in the legs, and in a slighter degree in the arms, occurred at the same time, and have constantly continued and augmented in severity since the beginning, (she has umbilical hernia for many years.) She also states, that her health has been deranged in the winter, during the fogs, suffering from alternate constipation and diarrhœa, besides she has had a severe cold for the last month, with partial extinction of the voice.

18th, 5½ P. M.—Face a little blue, with the expression of suffering; nose cold, rest of face cool; arms and forearms cool and livid; eyes hollow, and sight a little troubled. Hearing perfect; folds in the skin of the neck are slowly effaced. Cephalalgia. Pulse 124, very small and feeble. Respiration 34, rather high. Aphonia complete. Cramps very severe, causing contortions. Tongue cool, blue at the edges, yellow and coated at the centre. Intense thirst. No pain remaining near the umbilicus, but the oppression at the epigastrium, which existed since the beginning of her indisposition, continues. Since her entrance she has vomited several times a greenish matter at the bottom of which is a little mucus. Some dejections. Suppression of urine—½ injection of flaxseed, With 5j. laudanum. Iced lemonade. Frictions. Sinapisms.

19th, 8 A. M.—Eyes still hollow. Little lividity of the face, surface in general of *higher* temperature than in the normal state, colour of neck and arms as yesterday. Slept well as soon as the cramps had ceased after the repeated frictions. Sight better, but still a little obscure. Ringing in the right ear only. Continual

drowsiness existing from the 17th, but when dissipated, she speaks and moves with vivacity. Voice nearly natural. Cephalalgia. The cramps are less in the inferior extremities, but more severe in the hands, and still force cries from the patient; she suffers intense pain in the muscles of the right lumbar region. Pulse 100, small and feeble. Respiration still costal. Tongue coated, and white at the centre, a little red at the edges. Thirst, and desire for cool and sweet drinks; lemons are disagreeable to her when in health. Still a slight tenderness and feeling of soreness from the vomiting in the epigastric and umbilical regions, but not distinct pain. Vomited five or six times last evening a greenish, bitter liquid, and this morning some tisane which she had drunk. Nausea frequent. Alvine discharges dark green and liquid, almost incessant, and without the consciousness of the patient. Seltzer water with solution of syrup of gum.  $\frac{1}{4}$  injection with  $\mathfrak{S}$ ij. laudanum, every two hours. Continue frictions.

4 P. M. The blue colour of the arms was in part due to a dye in which she had plunged them, and is removed by washing. Temperature more elevated. Intellect more lively. Sight improved; no tinnitus aurium. Cephalalgia not increased. No cramps, but a little numbness in the fingers. Pulse 100, with no particular character. Respiration 16, regular, not costal. Tongue dry and yellowish-red at the centre, whitish at edges. Thirst less than this morning. Vomited frequently, but only after drinking; feeling no nausea at other times; a flocculent green matter lies at the bottom of the liquid vomited. No dejection since the last injection, which was given an hour ago. Oppression without pain at the epigastrium. Venesection,  $\mathfrak{z}$ vij.; cataplasm to epigastrium; Seltzer water; discontinue injections.

20th, 7 A. M.—Expression of countenance more animated and natural than yesterday; felt better and less oppressed after the bleeding; slept tranquilly, but felt frequent flushes of heat; vomited twice before and after drinking, a greenish, bitter matter; two dejections, not copious; urine natural frequency; abdomen indolent; feeling of tension at the hypogastric region, which is less yielding to pressure; pulse 88, tolerably full; tongue whitish, moist, and very warm; folds of the skin of the neck slowly effaced; a little cephalalgia. Seltzer water with solution of syrup of gum; antispasmodic potion, with  $\mathfrak{z}$ j. syr. papav. alb.; two  $\frac{1}{4}$  injections of flaxseed; two rations of diluted broth.

4 P. M. Heat elevated; expression of animation in countenance; feeling of weight in the head; drowsiness frequent; pulse 88, full and



regular; tongue brownish and dry at the centre, moist in other parts; thirst less; from time to time cramps in the hands; borborygmi, but no dejections; urine. Twelve leeches to neck; injection of flaxseed; discontinue potion.

21st, 7½ A. M.—Amelioration immediately after the application of the leeches; still a little frontal cephalalgia; no nausea, vomiting, nor dejections; intellect and senses perfect; borborygmi; urine scanty; copious perspiration; appetite and thirst natural. Seltzer water, sol. syr. gummi; two and a half portions of rice; two rations broth.

4 P. M. Feels better; countenance good; a little heaviness of the head; heat of skin a little elevated; a very slight sensation of cramp in the fingers; tongue nearly clean; no nausea nor dejections. Continue prescriptions.

22d. Improvement continues. Note not taken.

23d. Intellect perfect; tongue moist, but still a little yellow at the centre; appetite; one liquid discharge since yesterday; urine abundant; but the patient says more coloured than in health; pulse 84, character of it natural; no perspiration; some hiccough. Sol. syr. gum.; injection of flaxseed; two and a half rations soup.

24th. No cephalalgia; appetite; feels better; a little perspiration upon the chest; tongue moist; pulse 80. Sol. syr. gum.; enema of flaxseed; three rations soup.

25th. Convalescent. Three rations soup; an egg; a cup of milk; and a little bread. Recovery complete.

CASE XIX. Hopital St. Louis. *Recovery by application of blister to the spine.* Method of M. GARNIER.—Adile Duquesnay, aged twenty-four years, of a nervous temperament, and of a constitution moderately robust, consulted M. BERGON at the Hôpital Salpêtrière April 14th, respecting a diarrhœa which had affected her for three days; but which was not accompanied with fever or colic, and which had not prevented her from attending to her usual occupations. M. B. advised rest in bed, diet, some simple mucilaginous drinks, immediately after returning to her lodgings, the diarrhœa became remarkably intense, accompanied by head-ache, a general trembling of the limbs, and an extraordinary feebleness; soon after, nausea was manifested, and the patient was seized with violent cramps. Thirty hours after this invasion of cholera, the following appearances were observed. Face pale; the features decomposed; countenance much changed; the nostrils contracted; eyes sunken in the orbit; encircled by a blue line; the surface of the abdomen and thorax cool; the extremities cold; pulse small and frequent, (95 to 100 per minute,)

cramps frequent and extremely violent, tongue pale, moist, but slightly violet in colour, as if the patient had drunk some red wine; thirst intense; nausea constant, but no vomiting; dejections resemble water in which rice has been boiled, and which contains portions of the flocculent grains; pain at epigastrium; feeling of apprehension over the chest; voice very feeble; respiration short and frequent; urinary secretion entirely arrested. In conveying the patient from the chamber to a carriage, syncope occurred three times; upon her arrival at the Hôpital St. Louis, M. Bergeon applied two large blisters on the vertebral column; one between the shoulders, the other to the small of the back, an infusion of melisse was given for drink, and a portion with syrup of ether and half grain of opium; sinapisms were applied to the feet. The night was very disturbed, but the menses were manifested very abundantly, and the next morning the nausea had ceased, the cramps were a little less violent, and the diarrhœa less intense.

The second day after the entrance into the hospital, the diarrhœa scarcely existed; the cramps almost entirely dissipated; the heat of surface entirely reëstablished; the pulse strong; the voice recovered; and desire for food. On the third day, no cramps; no diarrhœa; scarcely any fever; voice sonorous; but there still exists great weakness; but the patient was resolved upon quitting the hospital, and that privilege was granted the next day. She has been visited since, and the convalescence is entirely established.

CASE XX. Hospital Neckar. Salle St. Susanne. Service of M. Bricheteau. Duval, a seamstress, aged forty-one years; tolerably robust. Taken ill on the 13th April, and entered the hospital the same day. She has had diarrhœa for the last six or seven days, the discharges becoming more frequent and thinner each day. This morning about 5 o'clock, she was affected at the same time with vomiting, and abundant stools, then with cramps, beginning in the toes, and afterwards extending up the legs. Pains in the epigastrium, with the sensation of twisting for six days; and colics during the last two. No tenesmus; no chills; dizziness since yesterday, and ringing in the ears, which prevent her from hearing, whether she speaks in a loud or low tone. No urine since this morning.

April 13th, 11 A. M.—Face cold, contracted, blue especially around the mouth. Eyes hollow and encircled, pupils natural; extremities cold and livid. Voice feeble, hoarse and changed. A little cephalgia. Pulse very feeble, 100. Tongue rather cool and whitish. Epigastrium scarcely tender; pain of the right side in the region of

the liver. She has diarrhœa, vomiting and thirst; prefers hot drinks.

— Frictions, hot bottles to the feet. Hot chamomile tea. Potion of peppermint, alcohol and sulphuric ether every two hours. Injection of twelve drops of laudanum.

7 P. M. Face a little red, the pulse has risen, hands and feet warm, abdomen tender, no dejection since the enema; vomiting and cramps from time to time, but less. No urine.

14th, 8 A. M.—Sensation of heaviness in the head. Eyes slightly injected. Pulse eighty-five, strong. No cramps since last evening. Thirst less. No urine.

15th, 8 A. M.—Diarrhœa much less. No vomiting since the evening. No cramps. Urine suppressed. Some dizziness and disposition to sleep. Epigastrium not tender. Pulse 70, less excited. Tongue a little red, moist, covered with a mucous coating. Thirst diminished, but still considerable. No pain in the abdomen.

— Infusion of chamomile. Infus. orange flowers. Injection of twelve drops laudanum. Anti-emetic potion.

Infusions of chamomile, and of orange flowers. Enema, gtt. xij. laudanum.

April 16th.—Slept well. No vomiting. The cramps which returned yesterday, yielded entirely to frictions. Return of diarrhœa at six this morning. Stools not attended with pain. Urinated last evening. Thirst increased. Tinnitus aurium yesterday, none this morning. The menses, which were arrested at the beginning of the disease returned last evening. Pulse good. Skin natural. A little appetite. Whitish coat of the tongue is diminished. Epigastrium still a little sensible. Some pain at the extremity of the last rib on the right side.

Infusion of chamomile with nitre. Potion of gum with nitre. Enema of laudanum gtt. xij.

17th. Morning.—Vomited this morning a greenish matter, the diarrhœa continues. Abdomen not more painful. Menses continue, but in small quantity.

7 P. M. About ten this morning, she discharged a yellow matter without pain, the diarrhœa has ceased since that time. She feels better. Urine copious. No pain. A little feeble. Appetite tolerably good. Face and voice nearly natural, as well as the tongue and skin. No cramps since the day before yesterday. Took to-day a potion of sulphuric ether, and orange flower water, much relieved by it. But still thirst.

Soup and gruel.

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18th. Slept well. No pain, vomiting, cramps, nor dejections. Urine abundant. Pulse a little excited. Skin warm.

Lemonade. Broth.

19th. Improving. Lemonade and broth.

20th. Same condition, except slight rheumatic pains in the sides.

Lemonade.  $\frac{1}{2}$  of ration of food.

22d. Discharged well.

Case furnished by our friend Dr. SMITH, of North Carolina.

CASE XXI. Hopital Neckar, Salle St. Louis. No. 19.—Madame Coquet, marchande du quatre saisons, of middle stature and embonpoint, robust, enjoys commonly good health, aged twenty-six years; has been married seven years, had three children and one abortior, viz. of her second pregnancy, is now four months gone in her fifth pregnancy. Entered the hospital the 10th April, about 3 o'clock, P. M. She has undergone great fatigue and slept little for some days past, on account of the sickness of her daughter. Fatigue excepted, was in good health yesterday; ate for supper some boiled meat and sallad; during the night slight general indisposition; ate this morning without much appetite a little meat soup.

About 10 A. M. without previous pain or symptom, except the slight general indisposition, she was seized at the same moment with violent vomitings and purging without colics; she became cold; cramps supervened in the course of two or three hours, occupying successively the feet, calves of the legs, thighs, hands and arms. On entering the hospital about 3 P. M. she presents the following state. Face shrunk, icy, almost black, triangular. Eyes hollow, sunk, surrounded with a deep, livid circle. Tongue cold, moist, livid, with a whitish fur. Voice almost extinct; she whispers, or on exertion her voice is raucous. Speaking fatigues her much. Extremities cold, numb, and livid or marbled. Pulse imperceptible. Suppression of urine. Thirst is torturing; she likes indifferently cold or warm beverage. Cramps, vomiting and purging with short intervals. No pain from the purging. She lies on her back and dislikes to be disturbed. Bottle of warm water to feet, frictions of the limbs, sinapisms to the calves of the legs, a current of warm air by means of a portable chimney, was conveyed under the bed-clothes, and every two, three, or four hours a desert-spoonful of the following potion. R. Syrup cort. aurant.  $\mathfrak{z}$ i.; vin. Malaga,  $\mathfrak{z}$ i.; aq. Menth.  $\mathfrak{z}$ i.; aq. Tiliæ europæa,  $\mathfrak{z}$ i.; ether sulfuric,  $\mathfrak{z}$ j.; laud. (Rosseau.)  $\mathfrak{z}$ j.—M.

*April 11.* She presents to-day the same state; except that the symptoms are less urgent. She took to-day thirty-six grains, of ipecac. without any apparent effect. For beverage to-day, lemonade; potion every four or five hours.

*April 12.* The same symptoms are present as before, but less urgent; temperature nearly natural. Infusion of chamomile. Potion.

*April 13.* This morning slightly comatose, much disposed to sleep. Eyes injected. Vomiting and purging continue, but are less urgent. Six leeches were applied behind each ear, which have abated the coma in a considerable measure. Pulse is perceptible, very weak. No cramps to-day. General weakness very great. Respiration a little constrained. Prescription of the morning, leeches, sinapisms to calves of the legs, tisan. Potion.

*April 14.* Comatose, face red, eyes very injected, light-headed during the night, pulse feeble, surface warm; purging and vomiting much diminished; blister to the calf of one leg, a bladder of ice to the head, thirty-six grains of ipecac. at two doses. I confess I could not see any other indication than that ipecac. has been ridiculously vaunted as a specific. However, the ice relieved her head notably, it was continued two hours. The stomach was in the same state after throwing off the ipecac. as before. She aborted—a dead child about 5 P. M. Potion, tisan.

*April 15.* Slightly disposed to sleep. Face rather red. Pulse active—eighty-five. Urinated a considerable quantity this morning for the first time since the commencement of the disease. Vomited this morning a yellow viscid matter. Tongue red and dry. Thirst much less urgent. Purging is very slight. Tisan of Tilleul with orange flower water. Potion two times in the twenty-four hours.

*April 16.* Vomiting and diarrhoea ceased. One passage since yesterday morning. No cramps. Urinates freely. Tongue moist, clean. Pulse pretty good. Surface of the natural temperature. Intellect clear. Tisan with chamomile and orange-leaves water; enema with ten drops of Rousseau's laudanum.

*April 17.* Four stools since yesterday, with efforts to vomit. Pulse a little excited. Slept pretty well. Urinates freely. No cramps. Gradually improving. Gum Arabic; enema with ten drops of Rousseau's laudanum.

*April 18.* Somewhat disposed to sleep. Ineffectual efforts to vomit. Epigastrium not sensible. Pulse a little excited. Tongue red, smooth, moist, a little swollen. Eyes slightly injected. One stool since yesterday. Bled a little at the nose from efforts in coughing. Gum Arabic.

*April 19.* Slept well. Tongue slightly red, moist. Eyes no longer injected. Face less flushed. Vomited and purged a great quantity of bile. Pulse good, a little appetite. Tisan of Tilleul and of orange leaves; enema with laudanum and rhatany.

*April 20.* General state favourable. Same tisan—one soup.

*April 21.* Complains only of a slight cough and general weakness. No pain. Tisan of Tilleul and one-quarter ration of food.

*April 22 and 23.* Same state—same prescriptions.

*April 24.*—To-day about 8 A. M. and again at noon, she had fits of violent shaking, about an hour each. She took nothing, and felt as usual after they were past. Prescription of the morning, Tilleul, gum Arabic, one-eighth ration of food.

*April 25.*—She slept well. About 9 A. M. a slight shivering, which was followed by head-ache and fever. She urinates, and has her passages now in the usual manner. Same prescription.

About 7 P. M. after an icy sensation of a moment's duration, occupying the whole body, she shook violently without pain. This shaking was cut short immediately by the application of ligatures to the arm and thigh, so as to arrest completely the circulation in the limbs.

*April 26.* Slept but little, but suffered no pain. Is gradually improving on the whole. Inf. chamomile; gum Arabic; soup, one-eighth ration of food.

*April 27, 28, 29, 30.*—Continues to improve. All the functions are gradually resuming their state of health. No shaking since the application of the ligature.

*May 1.*—Discharged cured.

The external means for keeping up the heat were employed till the reaction was fully developed. This took place very slowly, and was not complete before the 14th of April. The intervals between the times of taking the potion were gradually increased. The potion was entirely discontinued the 16th of April. The reëpearance of urine was coincident with a noticeable improvement, particularly in the circulation. The pulse before small and very feeble, became free and full. During the reaction, after it was fully developed, even to decided convalescence, little more was necessary to be done than to moderate the determination of blood to the head, once by leeches, the second time by ice, and derivatives to the legs. The relief afforded by the ice to the head was more decided than by the leeches; and also to check the diarrhœa by opiate injections. After the abortion, the lochial discharge in moderate quantity continued till her complete restoration to health. How far this discharge, operating as a derivative, contributed to her recovery, would afford mat-



ter of study, had we other facts of the same kind in sufficient number. I can discover nothing like periods in her disease; reaction came on very slowly, which very gradually changed into convalescence without any crisis. She had a slight cough for three or four days during convalescence. The ipecacuanha seemed to produce no effect whatever. She was doubtless much indebted for her recovery to the extremely vigorous constitution which she possessed. It is the most severe case I have seen followed by a recovery.

Communicated by ASHBEL SMITH, M. D. of Salisbury, North Carolina.

CASE XXII. Hôtel-Dieu, treated by M. MAGENDIE.—Lemoine, forty-six years of age, lace-maker, living in Rue des Lavandiers, No. 3, came into the Salle St. Monique, at Hôtel-Dieu, on the 3th of April. She says she has had frequent and liquid stools for four days. These stools were not preceded by colics. The day after the first appearance of them, (the third day before the entrance of the patient into the hospital,) she vomited. The vomiting continued all day, and at night she was taken with cramps in the legs. She remained in this state until the 5th of April, without taking any thing to relieve the vomiting or diarrhoea except some brandy.

On the 5th of April, when the patient entered the hospital, the following symptoms were observed. Skin generally cold; face and extremities of a bluish colour and extremely cold; cramps in the legs; pulse insensible; even the pulsations of brachial artery were not sensible to the touch; the voice was like that of a young child; there was great pain in umbilical region; continued vomiting of a greenish fluid matter, and diarrhoea which resembled urine. The patient has not urinated since yesterday.

M. Magendie ordered the following treatment.

The patient is to be put in a warm bed and to be rubbed with equal parts of ammonia and spirit of camphor. Immediately after the frictions the patient is to be surrounded with sacks of hot sand, and to drink as often as possible of hot punch made with tea four pints; four lemons; alcohol, 1 pint; sugar, 1 pound.

*April 6th.*—The skin is warmer than it was yesterday. The diarrhoea has ceased. The vomiting still continues. The pulse is sensible but feeble. The extremities are still of a bluish colour, but not so cold as they were yesterday. The cramps in the legs have ceased. The patient has not yet urinated.

M. Magendie ordered hot wine to be given in the place of punch,

because the patient does not like this latter drink. The frictions and sacks of hot sand are to be discontinued.

*April 7th.*—The patient has urinated to-day for the first time since her entrance into the hospital. The other symptoms are the same as they were yesterday. The same prescription (hot wine,) to be continued.

*April 8th.*—The vomiting has ceased. The skin is of its natural warmth. The pulse is natural. No vomiting nor diarrhœa. The urine is natural. M. Magendie pronounced the patient convalescent, and ordered her chamomile tea and soup twice a day.

*April 9th.*—The patient is in the same state as she was on the 8th. Prescription, morning and evening.

*April 10th.*—The patient is able to get up and walk about the ward. Her drink is changed for wine and water. A mutton chop is added to her chamomile tea, soup.

*April 11th.*—She is in the same state. Prescription the same.

On the 12th of April, the patient left the hospital, and on the 24th of April, I visited her at her lodgings and found her in good health. She says since she left the hospital she has been as well as she was before she was taken with the cholera.

Communicated by THOMAS L. OGIER, M. D. of South Carolina.

**CASE XXIII.** Treatment of M. Rostan. Ferdinand Mendilly, (Italian,) æt. twenty-four, cage-maker, living Rue Auvall 8th arrondissement. His habits are temperate, alimentation sufficiently good; his lodgings well-aired and comfortable, his general health good.

Without having committed any excess, Mendilly was attacked on the morning of April 16th, by slight colics, but not feeling otherwise indisposed did not discontinue his usual work. On the morning of the 17th, the colics became much more violent, accompanied by copious alvine discharges, which at first had some consistence, and were of a yellow-green colour. These were repeated at least twenty times during the morning; each succeeding dejection becoming more and more liquid and less coloured, until, (according to the patient,) they were exactly similar to a weak decoction of rice, in which are a number of flocculi. Violent cramps came on soon after the increase of the diarrhœa, and were excruciating in the upper and lower extremities. The patient was admitted into the temporary hospital, of the "Grenier d'Abondance" at 1 P. M. the 17th. On the morning of the 18th, he presented the following symptoms. Tongue rather dry, rose-coloured on the borders, white in the centre, without any

mucous coating; thirst intense. Vomiting in the night after he had drank an aromatic infusion. Pain of the chest, and of the left lumbar region; colics less intense than yesterday; oppression very great; voice extinct; pulse small, frequent, but easily counted, 98 per minute. The cramps, which yesterday were so violent, have diminished in intensity since the patient has been placed in a hot bath of 104° Fahr. where he remained three-fourths of an hour. He has had some sleep during the night, but it was often interrupted and agitated. The eyes are deeply excavated, and sunken in the orbits, the conjunctiva is injected; the face of a deep leaden colour and cold, nose cold, the hands and feet lightly violet, and partake of the general coldness of the body, but are warmer than on the preceding evening. The urinary secretion entirely suspended. Through the day the patient has taken every hour a tea-spoonful of the following potion. R. infusion of tilleul, (lime-tree) ℥iv.; strychnine, gr. j.; syrup of orange flowers, ℥ij.; syrup simp. ℥iss.—M.

The warm bath was readministered on the 19th; the drink of the patient was an infusion of tea with sugar; an injection of mucilage of gum arabic, ℥j. with fifteen drops of laudanum was administered. Under the influence of this treatment, the favourable change manifested on the 18th, was much increased on the 19th. The cramps and diarrhoea ceased, the pulse regained its force; the oppression was dissipated; the eyes are more natural; the violet colour diminished, and the patient had a calm and refreshing sleep.

On the 20th of April, appetite returned, but absolute diet was still enjoined. The urinary secretion was in part reestablished.

21st. Countenance, expression, and colour natural; secretions reestablished; no remains of the disease other than feebleness; he was allowed light broths. On the 22d, food increased, patient in entire convalescence.

*Symptoms.*—In all, or nearly all the cases we have observed, diarrhoea commenced before the other symptoms; sometimes, but rarely, it was preceded or accompanied by chills; generally it began suddenly without premonitory signs other than flatulence and borborygmi. These symptoms cannot be regarded as peculiar to cholera, or as forming a part of the disease, since the majority of the inhabitants of Paris probably suffered from this modification of the epidemic influence. The diarrhoea was usually at first moderate, from two to ten liquid stools in twenty-four hours, but when the disease assumed a graver form, the dejections suddenly became extremely frequent, and



sometimes were almost incessant, with severe colics, which were relieved for a moment after each discharge. The colour of the dejections was various, but generally, at first, green or yellowish. The disease was regarded as commenced as soon as this exacerbation of the diarrhœa took place, and now speedily assumed its characteristic symptoms. The head-ache, vertigo, anorexia, and slight uneasiness which accompanied the commencing diarrhœa, were replaced by intense thirst, uneasiness at the epigastrium, vomiting and cramps; these symptoms closely followed the aggravated diarrhœa. The dejections are now composed of whitish albuminous matter, with parcels of mucus interspersed, like boiled rice, but sometimes the greenish or yellow colour is unchanged, at other times the stools are of a deep chocolate colour. The matter vomited consists at first of the ordinary ingesta. subsequently of bile followed by a whitish liquid like that of the dejections, and intermixed with mucus, or else white and glairy; at the beginning of the disease we often observed this last-described liquid thrown up nearly without effort, and sometimes almost streaming from the mouths of the patients. The abdomen is sometimes free from any pain; more frequently there are colicky pains of the intestines and a deep-seated constriction at the epigastrium, which the patients compare to the feeling produced by strong pressure; the pain at the epigastrium is not always increased by compression, and in some instances is even relieved. Cramps occur simultaneously with the vomiting or soon after it; they commence in the calves of the legs and feet, then extend upwards along the thighs, and are sometimes felt in the abdomen and along the spine. The upper extremities are nearly as often affected with cramps as the lower, but at a later period and in a less violent degree; in a woman at the Hôtel-Dieu we observed a strong trismus of the jaw, and generally the contraction of the muscular fibres during the cramps may be distinctly seen beneath the skin. The intellectual faculties are perfect, but a little duller than in health. The senses are frequently affected, but generally only for a short period. The voice is enfeebled, disguised, or nearly lost. The countenance expresses great anxiety; the eyes are much sunken and the cheeks depressed; the face, extremities, and frequently the chest are of a blue or violet colour; in the face this colour is especially marked around the eyes and in the lips. Sometimes this colour is so deep that it approaches a black, but only in cases of extraordinary severity. The surface is cold, especially the nose, the skin upon the prominences of the cheek, the hands and feet, but the patient most frequently is ignorant of their coldness, or even fancies that they are unnaturally warm; at other times, but rarely, he expe-

riences the sensation of cold. The skin of the extremities is singularly wrinkled, resembling the hands of a washerwoman, but thrown into more longitudinal wrinkles; if folds be made in the skin of the neck or other parts which are not very tense, by pressing it between the fingers, they remain a long time without disappearing. The whole surface resembles that of a dead body, but with this remarkable difference, that the temperature during life seemed much cooler to the hand than some hours after death; we had frequent occasion to verify this fact at La Pitié. The pulse at the commencement of the disease is scarcely affected, but with the progress of the cold stage sinks, and in severe cases ceases entirely in the radial artery; the pulsations of the heart require the application of the ear with great attention to be counted. This torpor of the circulation was like the other symptoms just mentioned, most frequently observed at the beginning of the epidemic, and often continued after the heat had returned to the extremities. The respiration is very costal, and usually, although not always, frequent, and almost invariably attended with great oppression, which forces the patient to change his posture frequently and lie with the hands out of bed. The urine is much diminished, or more frequently totally suppressed as soon as the grave symptoms appear, before the cold stage is completely formed, and does not return until the amelioration of the general symptoms, even if the diarrhoea and vomiting should cease. These symptoms of the second or cold stage do not necessarily all exist, nor is the order of their succession, although regular, rigorously established; but in tracing a picture of the fully developed form, it is easy to imagine the less perfect or milder types. Before death, the vomiting, cramps, and diarrhoea sometimes all cease; the patient falls into a state of partial stupor from which he is easily roused; the lividity and coldness augments, he generally lies on his back, the head thrown backwards, and eyes nearly closed and covered with mucus; stertorous breathing and sometimes cold perspirations precede the moment of death.

When reaction comes on, the warmth is restored to the extremities, but the more forcible action of the heart should be regarded as a much better evidence of the safety of the patient than merely the condition of the cutaneous surface. The voice becomes stronger, the vomiting and diarrhoea either cease or are greatly diminished; the cramps are less intense, but do not entirely subside as soon as the other symptoms; the urine becomes copious and natural. This period is scarcely less dangerous than the second or cold stage, and if the greater number of victims perish during the period of prostration at

the commencement of the epidemic, the consecutive diseases are more destructive when the disease bursts forth with less violence. Congestions of the brain, as indicated by the flushed face, stertorous respiration at times, and stupor should be carefully observed; nor is the unusual brightness of the eye and sudden vivacity of intellect to be regarded with much less apprehension. The cadaveric lesions of the brain in cholera are as little constant as in other diseases, but the changes observed after death were still sufficient to confirm the obvious symptomatic derangement. Pneumonia occurred frequently, not only in the cases upon which our analysis is based, but in a still larger number of mild choleras, it was detected and arrested by an appropriate treatment; the diagnosis must be based rather upon the appearance of the sputa and the examination of the physical signs than the state of the pulse or respiration. The digestive organs *offer* symptoms of a new character; the tongue is coated, warm, red at the edges, the epigastrium and abdomen painful upon pressure, and the seat of a more constant, severe pain, than that produced by the colics. The intestinal canal becomes the seat of an unequivocal inflammation, the more severe from the great functional disturbance it had suffered, a cause of disease which is added to the disorder of the circulation and extreme feebleness that favour the inflammatory action in the whole system. If these symptoms are mild, the convalescence is prompt; patients who had been extremely prostrated, in a few days recovered their usual health; if the secondary inflammations are violent, the convalescence is longer and liable to interruptions or even relapses; but in no case should we forget the extreme danger of the disease, or allow a patient to return to his usual habits, until strength be perfectly reëstablished; not a few of those discharged as cured from the hospitals of Paris, were really perishing from a return of the cholera, or from one of its attendant diseases.

*Treatment.*—The subject which we approach with the greatest reluctance, from the extreme difficulty which it offers, is that of the treatment; this difficulty depends upon the little power which our remedial agents possess of opposing this disease, and still more the necessity of constantly varying the means employed, and the degree of activity in their use, according to the diversified stages which cholera presents. In the diarrhœa, which may either be a precursor of cholera, or merely a slighter action of the morbid cause, the treatment should only differ in energy from that employed in ordinary seasons against a similar affection. In the mildest form there is no nausea or ex-



citement of the pulse, or pain in the abdomen; the only inconvenience experienced is the borborygmi and the liquid discharges; here the abstinence from food should be immediate, or the diet limited to light broths; this diet alone, or with a moderate dose of opium, will generally arrest the symptoms. The same diarrhoea assuming a severe form, has received the appellation of cholérine at Paris; the dejections are more frequent, and often attended with pain; the pulse usually a little excited, with general feeling of uneasiness or vertigo. The diet should be as rigid as in the last mentioned instance, but the febrile excitement should be reduced by bleeding, and leeches if any local pain exist; to these depletory means a warm bath may be added, provided a bath can be placed close to the bedside of the patient, and be given without the slightest delay, the bath is usually followed by profuse perspiration, and with salutary effects, as the authors can attest from their personal experience. Should the discharges be still abundant, they should be checked with opium, and if the mercurials possess any efficacy in changing the course of cholera, theoretically we should advise their administration at this point, practically we know nothing of their action in this epidemic. External stimulants, as sinapisms, must be used at the discretion of the practitioner, the ordinary rules for their application directing his prescriptions. The symptoms combated by these means do not yet constitute the cholera, they are but the prodromus, but the most useful and interesting moment for the practitioner is that of anticipation and prevention rather than cure. After the diarrhoea has continued for some time, the commencement of the formed cholera is announced by the vomiting and cramps, which are not at first attended by the alteration of the voice, or the blueness and coldness of surface. The symptoms are now the most urgent, and require the most vigorous treatment, blood-letting is adviseable if the pulse be not much depressed, and should be carried as far as the strength of the patient permit it, the effect of it in the cases with which we are familiar was happy; unfortunately our number is necessarily limited, for the patient in hospitals are rarely seen at the most favourable moment for treatment. Use should be made of the *hot*, (not the warm,) bath, at 104° Fahr. as practised by M. Rostan, and external stimulants; should no pain at the epigastrium exist, other than the colics, which are diminished by pressure, an emetic of ipecacuanha may be administered with great advantage. M. Andral was much pleased with its administration at La Pitié, and we know that during the existence of the cholera at Vienna, the treatment by ipeca-

cuanha was regarded as the most effectual. It may generally be given without fear for the most careful examinations have proved that the inflammatory appearance of the stomach was more frequently found at the termination than during the most violent period of the disease, and at the beginning, our object is to change by a sudden impression the derangement not of one but of the whole systems of organs. The cramps are most readily relieved by smart frictions, which are more effectual than compression by tourniquets as tried at one of the hospitals; the frictions should be kept up with perseverance until the patient is relieved. Should the blue cold stage come on in spite of the most vigorous treatment, we must not think of pursuing further the depletion; it was imagined that the profound prostration was due to the congestion of the internal organs which impeded the action of the whole machine, but the attempts at blood-letting, which <sup>could</sup> only be performed with the aid of hot applications to the arms, <sup>caused</sup> a temporary flutter of the pulse, followed by a more rapid extinction of life. The treatment is the most simple possible, for it is not with the intention of curing the disease itself, but of preserving life, that we must stimulate; frictions with warm liniments should be almost incessant, and made from the extremities towards the central organs; sinapisms to the extremities; and particularly a liniment of ammonia and turpentine, which is applied along the spine by flannels impregnated with it, a hot smoothing-iron is then to be passed rapidly along its whole length. This application was employed by M. Petit of the Hôtel-Dieu, and with great advantage. Dry heat is preferable to moist, hence resort is had to sand-bags, hot cloths, or still better, to the introduction of heated air beneath the bed-clothes by a tube communicating with a small furnace.

The question of internal stimulants has been much discussed, we regard them as improper in themselves, but sometimes their employment becomes necessary, but only for the immediate necessity of preserving life, and as soon as a moderate degree of reaction is produced, they should be discontinued. : The diarrhœa in the cold stage, and that immediately preceding it, should be combated by opiate injections, alone, or with a preparation of rhatania; but if these injections succeed in their effect and are not discharged, their influence if continued is injurious, and tends to aid in producing the internal congestions to which the patient is exposed by his extreme feebleness. The vomiting is best allayed by Seltzer water given simply, or with a mucilaginous syrup, or if not extremely disagreeable to the patient, ice in substance, or iced water in very small portions.

But little else can be done during the cold stage, which is not one in which the powers of medicine are very efficient; when fairly formed it is usually fatal, and the mortality of the most destructive period of the epidemic arose from the deep prostration of the individuals, who were struck with the full violence of the disease, almost without the precursors usually observed. Every variety of stimulant treatment was employed in vain, and those who witnessed the terrific aspect of the cholera at its first appearance, were not surprised to learn that of the first one hundred cases admitted into the Hôtel-Dieu, ninety-seven of which were cholera, ninety-six died, leaving but one solitary case of the disease cured. Yet this was not from the treatment of a solitary physician, but the results of the practice of all of the physicians and surgeons, who divided the patients in the ward. This bad success was not peculiar to the Hôtel-Dieu; at La Pitié, La Charité, Necker, and even at the Val-de-Grace with healthy, robust soldiers, the results were about equally bad. The professor who has attracted so much attention, as the author of the physiological system, stated, that he had lost but about one in six patients in the most unfavourable period, unfortunately his own official reports proved the strange delusion, with which he flattered himself. The difficulty of deciding as to the merits of any treatment in cholera, is evident, from the unfavourable results at the beginning of most of the epidemics, but especially that at Paris, and the happy termination of most of the cases which have occurred within the last fortnight, (May 5th.) The period of reaction is one of great risk, at first nearly all the patients died during the cold stage, but after the epidemic had continued a certain time, a large number passed safely through this period, and perished during a fancied convalescence. The therapeutics must be based upon the strong tendency to local inflammations or congestions, which must be watched with the utmost care, as a slight lesion of an organ, will produce the most fatal effects upon the enfeebled victims of cholera. Opium should be discontinued or given moderately and *cautiously*, if the head becomes hot with cephalalgia, brightness of the eyes, ice should immediately be applied over the whole scalp, and blood be drawn especially by leeches. Should the respiration be a little impeded, the chest must be explored, and if a little crepitus exist in any part, leeches should be applied to it, if the patient's feebleness forbids venesection. The abdominal viscera should be carefully examined, for if the autopsies have taught us that the lesions observed in the cases which terminated with the greatest rapidity, were few and not constant, we have also seen that the most severe inflam-



mations very often occur in the intestinal canal; the abdomen should be carefully pressed, and even if no tenderness exist, should the thirst and heat of skin be great, local depletion and antiphlogistics are requisite, the small and large intestines are not exempt from these inflammations, and equally demand an analogous treatment. The physicians at Paris were desirous of testing the merits of many of the heroic remedies, but they quickly discovered that the violence of an epidemic, forms no exception to the general rules of treatment, and returned to a more rational employment of the ordinary means, rather than a fruitless search for boasted specifics.

In concluding our brief history of cholera, we may state that not only have the physicians of the three largest hospitals at Paris, declared their disbelief of the existence of contagion, but that from *our* own observation, the physicians and pupils who passed the greater part of the day in the wards and dissecting rooms, were at least as exempt from cholera as any other classes of the population. In our personal acquaintance, not an individual was attacked with severe disease. The facts observed at Paris, add only another proof to the absurdity of quarantine regulations, at least with respect to epidemics of this character. We need not insist upon the diagnosis of spasmodic cholera, the vomiting, purging, *suppression of urine and cramps*, will characterize it even before the complete formation of the cold stage. The prognosis is simple, but depends chiefly upon the violence of the blue stage, the age of the patient and the disposition to secondary congestions or inflammations; at the commencement of an epidemic it is generally unfavourable, towards the close, on the contrary, the cases are milder and the chance of recovery is nearly as great as in other severe diseases.

*Paris, May 5th. 1832.*

ART. IV. *Case of Retained Placenta.* By F. Y. PORCHER, M. D. of Charleston, South Carolina.

MRS. —, the subject of the following communication, was about thirty-three years of age, tall, and of spare habit of body, had always enjoyed good health—been married about two years—been twice pregnant, and had an abortion each time in the third month: in the third pregnancy I was consulted occasionally for slight indispositions, and requested to attend on her in her approaching confinement. In the morning of the 14th of February, 1831, she fancied that her labour had commenced, and I was requested to see her. On my arrival, I found that there had been some discharge of water, but not the slightest pain; she was directed to keep her bed, and inform me if any pain should come on during the day. In the evening some pain was felt, which continued through the night, though slight, and at long intervals.

13th. Pain much increased, and the os uteri beginning to dilate—in a few hours sufficiently open to ascertain that it was a breech presentation. At 4 o'clock that afternoon she was delivered of a full-sized child. On applying the hand to the lower part of the abdomen, the uterus was found low down and well contracted. After waiting some time, an examination was made, and an hour-glass contraction of the uterus was found to exist. The spasmodic action was of so firm a nature as to render the introduction of but one finger exceedingly difficult, and could only be accomplished by persevering efforts: on overcoming the spasm so far as to reach the fundus of the uterus, the placenta was found entirely adherent, and so intimately connected that its edge could not be traced, and no part detached by the finger. During this examination, the tonic contraction of the uterus maintained a constant and powerful action on the hand, such as none but those who have experienced the effect of uterine contraction can estimate.

After making fruitless efforts to extract the placenta, it was deemed adviseable to desist for the time. Reflecting on the case, it appeared to have some peculiarities, and to present difficulties not easily overcome by the practitioner, or managed with safety to the patient. On passing the finger, for instance, along the cord to its insertion into the placenta, the ordinary spongy and thick mass appeared to be wanting, and to be inserted directly into the uterus; on extending the fingers around, it appeared doubtful when they passed

over the margin of the placenta; the uterine contractions were exceedingly strong, but did not in the least effect its attachment.

About 10 o'clock at night, six hours after delivery, I requested my friend, Dr. JOSEPH GLOVER, to see her with me. The nature of the case was stated, and he was requested to make an examination himself. He found the tonic contraction strong, and the placenta still adherent. The most judicious efforts on his part could not effect the slightest detachment, and it was determined to desist for the night, and prescribe an anodyne.

16th. On visiting the patient this morning found her comfortable; had rested well during the night, and continued free from pain; the state of uterine contraction in no respect altered; the placenta could be more distinctly felt at its centre. Particular engagements obliging Dr. Glover to leave the city, Dr. PHILIP G. PRIOLEAU was requested to see the patient with me. His efforts to extract the placenta were conducted with his usual skill and address, but with no better success. These repeated examinations and attempts at extracting the placenta had been conducted with as much gentleness as possible, but at the same time with resolution and perseverance; nothing, however, had been effected. It became necessary at this time to pause, and reflect on the peculiar nature of the case; the consequences which must result from the violence used in order to extract the placenta, and the probable consequences if left entirely to the efforts of nature. It was determined to desist from all manual efforts; to give the ergot in full doses, and, if practicable, to coöperate with it in effecting our object. Uterine contraction was promptly produced by this article; repeated doses were administered, and almost constant pain kept up. In the evening the uterine tumour could be felt externally much lower down, and of a more globular form. With the exception of pain induced by the ergot the patient was comfortable; skin cool and soft; pulse natural. An enema was directed, and the patient left for the night.

17th. She had rested well during the night; pulse somewhat excited; skin warm. The efforts used to extract the placenta had been borne by the patient with little suffering; but the uterus had now become sensible to every impression. An examination was made only with the view of ascertaining if any change had taken place since the day previous.

18th. She had passed a restless night; some fever this morning; skin hot and dry; no uterine pain. The cord, with a small portion of the membranes, came away in a putrid state. From the particular state of the uterus at this time, all attempts at removing the placenta



by manual efforts were necessarily abandoned. The system had now begun to sympathize with the condition of that organ. It became, therefore, necessary to meet this state of constitutional irritation by appropriate general means, at the same time that a solution of the chloride of lime was frequently injected up the vagina in order to correct the fœtor.

It is unnecessary to give a detailed account of all the symptoms and treatment of the case in its progress; it is sufficient to state that for three weeks constitutional irritation demanded almost our exclusive attention. The chloride of lime had effectually removed all fœtor: the discharge from the vagina had been from the beginning inconsiderable, and of a serous nature; had soon entirely ceased; no uterine pain had been felt.

About the middle of March our patient was taken with severe pain, and a sense of heaviness in the uterine region. These feelings had continued all night, and we thought it advisable in the morning to examine the state of the os uteri, and if the placenta was about to be thrown off, to assist the uterine efforts. The uterus was found low down in the vagina, and sufficiently open to admit the finger; the placenta could be distinctly felt pressing on the os uteri; the finger was insinuated some little distance between the placenta and the internal edge of the uterus. This examination caused an immediate contraction of the os uteri on the finger: any further examination was considered unnecessary. Our patient at this time was considered as convalescent; the pain ceased entirely in a short time; her health and strength improved daily.

On the 26th of March she was again taken with sudden and severe pain in the region of the uterus, with a sensation, as she expressed it, as if something was about to come away from her. Under these circumstances an examination was made. The uterus was found low down; the os uteri entirely closed, with rigid and unyielding edges. Here the examination ceased. From this time she regularly improved in health. In the month of June she left the city for New York, and travelled during the summer. She returned in November in good health, and has continued so to this time. During her absence she has had no uterine pain; has menstruated but twice; *no part of the placenta had ever been discharged.*

Such is a concise statement of facts in the above singular case; how the placenta has been disposed of is altogether a matter of conjecture. It may be supposed that from the peculiar nature of its attachment to the parietes of the uterus, a circulation of blood was kept up subsequent to the delivery of the child, between the two, and that

the placenta became an organized body. Such, however, was the powerful tonic contraction of the uterus, that it seemed impossible for any circulation to go on in a body subjected to such constant and close compression. It appears more probable, that this action on the placenta expressed from it all its fluids, at the same time that the atmospheric air was excluded, and putrefaction prevented; in this way it soon became a dry, innoxious body, offending only from its bulk.

That for several weeks after delivery the placenta acted as an extraneous body, and that the uterus made frequent attempts to cast it off was very apparent. It is however unnecessary to pursue these speculations further; should any thing occur at any subsequent time worthy of notice it shall be communicated. It is the facts which afford matter for serious and useful reflection in cases of firmly adherent placenta. It is now a rule of practice, that as soon as we are assured, that the natural efforts of the uterus are incompetent to the removal of the placenta, it should be done by art; until this is effected, the woman is not considered as entirely safe; this is certainly a good general rule, but in very difficult cases the practitioner may be much embarrassed in determining on the extent to which he should go in his manual efforts; he knows the consequences if rude and undue violence is offered to the uterus; he dreads the consequences to his patient, and the censure on himself, if the placenta is not removed. Impelled by such powerful motives, a decided and energetic course is pursued; the object is at last attained; but if inflammation of the uterus, extending to the peritoneum, and hectic from fever follow, which at the end prove fatal to the woman, such is the result of the manual efforts used for the removal of the placenta.

In more than one instance have I seen the woman's life sacrificed by an ignorant midwife acting on what she supposed an axiom in her profession, that "the placenta must be extracted." It is not intended by these remarks to censure proper and judicious efforts for the removal of a placenta firmly attached, but to express a belief that if the practitioner goes beyond a certain point, he jeopard's the life of his patient by the very means which he honestly intends for her safety. When this point is reached, and beyond which he should not go, is impossible here to state; let him reflect on the two evils presented; let him regard it as a case requiring his most serious attention, and the exercise of his best judgment.

*Charleston, February, 1832.*

ART. V. *Extirpation of the Testes and Penis, affected with a Cancerous Disease*. By J. C. HALL, M. D.

THE following case, given from memory, illustrates the propriety of pursuing with the knife a disease of the most malignant nature, and threatening a rapid destruction of life.

Mr. S. in mounting his horse many years ago, injured his left testicle, which, after causing much pain, dwindled away. Eighteen months since, this testicle grew irritable, painful, and much enlarged. It resisted every attempt at dispersion, and occasioning much constitutional derangement, reduced him to the lowest extremity. In the fall of 1830, I saw him in consultation with Drs. DAWES and CAUSIN. His aspect was bloated; limbs oedematous; and the lower extremities very painful from the distention; his strength was prostrated, and he might almost be pronounced moribund. The disease of the testis had burst through the inflamed and almost gangrenous scrotum, and was pouring forth a most luxuriant mass of fungus, easily bleeding, and emitting a most horrid stench. Much of this fungus had been clipped away by the patient and his surgeon, but still it was rapidly reproduced. As there was no alternative but immediate death, or an operation, the latter was determined on, but with no other expectation but that of deferring the fatal event. The patient having been revived by cordials, the testicle and all the affected portion of the scrotum was removed. The diseased mass upon examination appeared to arise rather from the tunics of the testicle than from the gland itself. Mr. S. was near sinking after the operation, but finally rallied, and the wound continued in a healthy condition for seven or eight weeks, when it assumed a malignant appearance, presenting all the indications of cancerous action. Defying every effort to arrest its progress, the knife was again resorted to, and the remaining testicle and much of the scrotum was extirpated, embracing every diseased portion. Again the wound did well for some time, but, putting on the same threatening appearance, all the remaining scrotum was cut away, together with a portion of the perineal surface which had become affected.

These several operations were thought at the time to embrace every diseased part, and even more, but the wounds never healed, and finally, after the lapse of a year from the first operation, the disease recurred, and spread over the perineal integuments and the posterior inferior part of the penis, destroying the urethra to the extent of an inch, and affecting the lateral parts of the corpora cavernosa.



Though despairing of success, yet, at the urgent request of the patient, a final operation was decided on. Carrying the scalpel deeply through the integuments and fat upon the pubis, we divided the suspensory ligament and the fascia coming from the thigh to the penis. Thus detaching it from the pubic arch, we dissected its crura from the pubic rami, and divided them separately.

The urethra was divided at a very short distance from its exit through the triangular ligament. The operation was completed by carrying the knife beyond all the diseased parts visible, and excavating a large portion of the perineal surface. Eight vessels were tied, as necessarily cut, and no secondary hæmorrhage of importance occurred. The wound left was very large, and the most soothing application was found to be fresh cream. The cure has been effected rapidly, perfectly, and we trust permanently.

Whether the disease with which Mr. S. was affected, was truly cancerous or not, does not depreciate the lesson of perseverance thus taught. His disease was rapidly hurrying him to his end, and had not his resolution give boldness to the surgeon, he would have been abandoned to a most horrid death.

*Washington City, Jan. 16th, 1832.*

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ART. VI. *Observations on Cholera Morbus.* By J. YOUNG, M. D. of Chester, Penn.

THE extreme sensibility at present prevailing throughout the world with respect to cholera, seems to demand of every one, who may have had any experience in its management, a statement of those modes of treatment which have been attended with most beneficial results. Whether our cholera bears any particular resemblance to the European or Asiatic disease, is a question which I am not prepared to answer; but, from all the information that I have been enabled to collect on the subject, I have arrived at the conclusion, perhaps the erroneous one, that the only essential difference between them, consists in the greater violence, and more rapid succession of dangerous symptoms, in the latter, than in the former form of the disease. Be this as it may, the Asiatic disease is emphatically called the "spasmodic cholera," and it is presumed that no one doubts the disease, as it occurs amongst us, being also spasmodic; thus far then, they certainly agree. Antispasmodics are the class of remedies used with most

success, in treating the disease in England, viz. the lancet, brandy, and opium. I have treated more than one hundred cases of the sporadic affection, as it occurs to a greater or less extent every summer in our county; the use of the lancet, I have always been afraid to venture on; in fact, I believe its use can very seldom be resorted to with advantage, or even with safety, unless guided by a nicety of discriminative tact, which too few of us possess; but brandy, opium, camphor, laudanum, with every variety of external applications have all, by turns, been tried; and all, (except external means,) have been laid aside, as far inferior to sulphuric æther in combination with laudanum. The following cases will serve to show the mode in which I have long been accustomed to manage it, better than any other method of description I can adopt.

CASE I.—J. G. was attacked at 11 o'clock on the night of the 20th of August, 1826, with cholera morbus. The late Dr. D. being the nearest physician, was called soon after the attack commenced, and staid with him till daylight of the 21st, when I was requested to see him. On my arrival, I learnt from the doctor, that he had taken twelve grains, by estimate, of solid opium, besides repeated portions of laudanum, brandy, camphor, essence of mint, &c. with external frictions of brandy, cataplasms of herbs to the epigastrium, and sinapisms to the extremities; but still the disease progressed. The patient's countenance was sunken and anxious; the whole surface covered with a cold, clammy sweat; the inferior extremities were cold, and drawn in large knots, with cramps; the fingers were stiff, and partially immobile, though not cramped; the pulse was small, quick, and feeble, and it was evident, that unless speedily relieved, death must inevitably ensue in a very short time. I suggested the use of æther with laudanum, as it was probable all the opium and laudanum previously taken, had been ejected, which was agreed to; we immediately gave a tea-spoonful of each in sweetened water; had him wrapped in a blanket wrung out of water as warm as could be borne; reäpplied sinapisms to the extremities and epigastrium; in twelve minutes he puked again, and complained of violent pain at stomach; cramps of legs and thighs continuing, though, as he expressed himself, with less violence; we repeated the tea-spoonful of æther without laudanum, and ordered hard frictions to the inferior extremities, with flannels and hot brandy; from this period he ceased puking and purging, and became gradually more composed. In half an hour the æther was again repeated alone, soon after which he sunk into comfortable slumber for nearly an hour, when he was aroused, and a few spoonfuls of warm

brandy toddy given, which remained upon the stomach; in another hour he took some spoonfuls of panada containing brandy; went to sleep again, during which we left him. Five powders, containing each two grains of calomel, with half a grain of opium, were left, to be given in the afternoon; with directions to give a little panada frequently, made pretty strong with brandy. He went on to mend gradually, so that in a week he could walk about the house.

CASE II.—Miss M. S. a delicate young lady, was attacked with cholera at 12 o'clock on the night of July 7th, 1827; at 2 o'clock I saw her; had drank freely of herb teas, which now returned as swallowed; I immediately gave æther and laudanum, a tea-spoonful of each; applied a flannel wet with warm brandy over the stomach; a tea-spoonful of æther was repeated immediately after each ejection, until she had taken the fifth tea-spoonful, when she sunk into a calm, comfortable sleep, from which she was not disturbed during my stay; this is the only case in which I have found it necessary to give more than the fourth spoonful of the æther. Left four powders of calomel, two grains each, and half a grain of opium, to be given at intervals of an hour, in the morning, and be followed with oil, if necessary. She walked down stairs in three days.

CASE III.—Mrs. G., an hale, robust woman, was attacked at 2 o'clock, A. M. September 9th, 1827, with cholera morbus. Unavoidable circumstances prevented me from seeing her till 9 o'clock; her situation was, at this time, truly alarming; the countenance was shrunken and contracted; surface cold, and covered with sweat, cramp in the legs and arms; so weak as scarcely to be able to speak; ringing in the ears, and frequent watery, thin evacuations “upwards and downwards;” her parents, husband, and some others, were weeping around the bed, believing she must surely die. I commenced giving laudanum and æther, as in the above cases; had her wrapped in a blanket wrung out of warm water, sinapisms to the extremities and epigastrium, with constant frictions to the extremities, of hot whiskey and pepper, by means of a stiff brush. After taking the fourth tea-spoonful of æther, the disease subsided, and did not again return; I now prescribed for the weakened and prostrate system, and in ten days she could attend to her household affairs.

Many other cases might be added, but these are sufficient to show the mode in which I uniformly treat the disease of late. In fact, such is my confidence in it, that frequently when called, I have sent by the messenger, a vial of æther, with directions for its use, and



thought no more of the case, till I have subsequently met the patient attending to his ordinary concerns. I believe, in a majority of cases, it will not be found necessary to repeat the æther more than once, or at most twice; although no danger will result from it, so far as I have seen, when repeated in tea-spoonful doses the fourth or fifth time, and perhaps oftener if occasion required. I have always ordered calomel and opium in small and repeated doses, as one and a half, or two grains of the former, with half a grain of the latter, every hour, till ten or twelve grains of calomel have been taken, commencing in a few hours after the subsidence of the disease, and followed by castor oil *pro re nata*.

I conscientiously believe, no more prompt or efficacious means can be resorted to in the cholera of our country; and hence I think it might be worth a trial in the spasmodic disease of Europe; particularly as so great a mortality attends it, under all the modes of treatment hitherto resorted to. I was first led to its employment, by Professor CHAPMAN's recommendation of it in flatulent colic. Having been sometimes baffled for hours in arresting it, (cholera,) with brandy, opium, and the various other articles recommended for its treatment, and believing there might be some analogy between it and colic, I determined to try it, and the result has satisfied me, that I was not theoretically mistaken. Æther is, undoubtedly, powerfully anti-spasmodic, and also, a powerful and highly diffusible stimulus, both which properties are peculiarly demanded in every severe case of the disease; and that it is far preferable to brandy, and will remain on, and tranquillize the stomach, when brandy will be ejected as fast as swallowed, a tolerably extensive experience warrants me in positively asserting. To be beneficial, it is only necessary to observe the same rules that are observed, or recommended in the use of other articles; viz. first completely "wash out the stomach" by repeated and copious draughts of warm water, or warm teas; and accompany its use with any, or all of those external applications, which the good sense of every practitioner will dictate, to meet the indication of restoring warmth, and the circulation, to the surface. Much, I believe, depends on judicious and well-ordered applications to the surface; in fact, without them, we can hardly expect to arrest very many of the cases annually met with, by probably every one engaged in practice; but by a prompt and judicious choice of these, in conjunction with æther and laudanum, very little difficulty will be found in the management of any case of common cholera morbus met with in ordinary practice.

*Chester, February 25th, 1832.*

ART. VII. *Case of Extensive Laceration and Contusion of the Hand, with Remarks.* By WILLIAM M. FAHNESTOCK, M. D.

**SURGICAL** reputation in former days was estimated by the number of operations performed by the aspirant for distinction; which seldom fail to procure a fame in proportion to his pile of dismembered limbs. Modern surgery, however, justly awards the honour to him who instead of removing, preserves an injured member, or reduces an irritation which would eventually destroy an organ and require extirpation. The age has passed away in which a bombastic flourish of the scalpel, and egotistic boasting can excite the confidence of the public. An operator to succeed, at present, must combine with much application and dexterity, candour, prudence, discrimination, and indefatigable perseverance.

Young gentlemen of the profession are, generally, too ambitious of displaying the trophies of their surgical skill around the walls of their office, and are much too apt to risk an operation, which maturer reflection and after experience would teach them to avoid, for the purpose of obtaining some notoriety. We cannot reprehend too severely this wanton sporting with the knife—of subjecting our fellow beings to dangerous experiments, to gratify our vanity, or, peradventure, jeopard their lives, to gain transient eclat.

While we thus censure the temerity of the rash, we must also deprecate the folly and presumption of the ignorant pretender, who frequently advises without a knowledge of consequences, and destroys for want of information to save. A case came under our notice recently, in which the patient was allowed to die of hæmorrhage, from division of the posterior tibial artery, produced by treading on a scythe, *because he refused to have his leg amputated above the ankle that they might secure the divided vessel*: the surgeon or pretender to surgery not conceiving the idea of compressing the artery or of cutting down and taking it up. While we pity the community whose lives and comfort are dependant upon the skill of such an individual, such stupidity not only merits public indignation, but also the penalty of the law—if we had any statutes to regulate the practice of medicine and surgery.

Since surgery has been raised above the mere manipulations of an art, and having assumed new importance by an accurate investigation into the pathology of the diseases pertaining to this department of medicine, it can only be exercised successfully by those who study

it as a science, and not as a mere art. An attentive study of the structure, the functions and the recuperative powers of the various parts of the system will often deter us from inflicting unnecessary pain and suffering, and, frequently, of entailing great inconvenience and privations on our patients. The improvements of modern surgery admonish us to great circumspection in taking up the knife to amputate or extirpate any portion of the structure, and has induced a distinguished teacher of surgery in our country to advise the student on providing himself with instruments to go into practice; first, to procure a stomach pump and a set of cupping-glasses in preference to a trephining case or amputating apparatus, with much confidence of him rendering himself more useful to society thus equipped, than with the more tempting weapons. The following case will perhaps better enforce our argument against the improper or unnecessary removal of limbs.

In the autumn of 1825, W. M. ætat. fourteen years, who was employed in a cotton factory, had his right hand drawn into the machinery and before it could be extricated was almost entirely denuded of flesh, and some parts of it left literally a skeleton. The skin and muscles were torn entirely off of some parts, while on most of the others it was in complete shreds. The second and third phalanges of the index, middle and ring finger were perfectly bare; the first phalanx had but little flesh remaining; and the integuments of the metacarpal bones as high up as the wrist, with the whole thumb and little finger were mangled and confused in a most extraordinary manner.

Among the many cases of laceration, contusion, and fractures which came under our notice, during our residence in the vicinity of Manayunk, an extensive manufacturing district in the county of Philadelphia, none presented such slender prospects of restoration, or more imperiously demanded the amputating knife. The lad, however, was poor; had no means of subsistence but his own industry, and no friends who were able to keep him in his misfortune. To save a member, therefore, of so much importance became a serious consideration, and on explaining the nature of the case to his family, who expected nothing else but amputation, we informed them, that it was our duty to remove the hand immediately, to avoid more serious consequences, and that if we did not, we might incur much censure; but that we felt a great anxiety to save the hand, and would prefer making the attempt to do so; to preserve the patient from becoming a burden on society, or the more humiliating dependence of existing



upon the charity of an Alms-house institution. With this view, and with some considerable confidence in the opinion of JOHN HUNTER, that denuded bones have the power of sending forth fleshy granulations, we adjusted the lacerated integuments as well as practicable, by drawing the shreds and remnants of muscle, as much as possible into their natural position with separate rollers for each finger, and formed a mould to place the hand in so as to keep the denuded parts moist, by placing them in simple cerate. The bandages over the bruised part were kept constantly wet with brandy. After a few days we were delighted to find healthy action taking place and soon observed small granulations forming. Encouraged by these prospects of success, we persevered in removing the dressings daily, using as much pressure as possible with the bandages to draw the new-made flesh forwards, and succeeded in getting all the bones covered but the last phalanx of the index middle and ring fingers, which remained exposed, pretty much in the condition as they were immediately after the accident happened: however, they finally took on the granulating process, which gradually covered the bones and completely effected the cure, after encountering many difficulties, and frequent misgivings of the power of nature to restore the parts. This of course required a tedious process, which would be more tedious to our readers to detail. Suffice it to say, that we had a demonstration of the restorative powers of nature, which nothing but the experiment could have convinced us of; and has impressed us with the useful lesson, of depending more upon the conservative powers of the system, and of teaching us more the necessity of aiding restoration instead of removing, at once, an extensive injury.

Thus were our efforts rewarded; and in a few months time the boy returned to his work with a tolerably good hand. We hope our success in this case will prove an incentive to more active exertion and perseverance in attempts to preserve important members. The delightful consciousness of saving a fellow being from dependence should stimulate every surgeon to the most unremitting exertions in restoring injured limbs. Whatever has been our success in the more important operations of surgery, this we consider our proudest achievement; and we hope it may incite others to more laudable efforts, and more glorious results.

ART. VIII. *Ligature of Common Carotid, for attempted Suicide.* By  
W. E. HORNER, M. D. Professor of Anatomy in the University  
of Pennsylvania.

ON Monday, June 18th, 1832, a criminal, named Washington Taylor, æt. 34, was brought up before Judge King, to receive a sentence of six years confinement in the state penitentiary, for counterfeiting. Upon the sentence being passed, he immediately drew a knife, and plunged it into his throat, a little below the angle of the lower jaw and on the right side; he then withdrew the knife, and not satisfied with the effects of it, he plunged it again into the same region of his throat, half an inch from the other wound. I was passing the court-house at the moment of this proceeding, and from that circumstance was accidentally called in by one of the persons in pursuit of medical aid.

I found the criminal in the court-room, sitting upright; a handkerchief soaked with blood was held by the persons present, over the wounds; it restrained somewhat the bleeding, but very imperfectly. On its removal the blood gushed out in a large stream, the size of a little finger, (but not per saltum,) from the wounds, and of an arterial colour. Having got this glimpse of the parts, I directed an assistant to apply the end of his thumb to them, and to press firmly against the front of the cervical vertebræ, while I went home, a distance of two and a half squares, for my instruments; on my way I met accidentally Dr. EMERSON, and engaged his assistance.

On my return, I saw that the pressure applied had been systematic enough, to restrain almost wholly the hæmorrhage. I then had the patient inclined half-recumbently on a settee, and changed the pressure to the trunk of the carotid at the lower part of the neck, which arrested the hæmorrhage very insufficiently; I then dilated the wounds by converting the two into one. I spent some minutes fruitlessly in attempting to take up the divided vessels, but the incessant column of blood pouring from them, concealed them so completely that I found it impracticable to succeed. By running my finger into the wound, I felt that the knife had passed in the direction of the carotid arteries and internal jugular vein, between the vertebræ and pharynx; and it was evident, from the copiousness of the hæmorrhage, and the redness of the blood, that a large artery was wounded, either one of the carotids, or one or more of their large primary branches. The extreme danger of the individual left no further time for attempts in this region, I therefore determined to take up the primitive

carotid, which I did by extending the wound downwards for two inches, and passing a ligature around the vessel on a level with the thyroid cartilage. The operation was very much embarrassed by the parts being continually overflowed with blood, so that I could scarcely get a glimpse of them for a moment at a time.

The patient resisted with all his might these proceedings, and protested with a loud voice against them, declaring incessantly his desire for the wound he had inflicted to take effect. Immediately on the ligature being drawn around the artery, the bleeding stopped completely, he became relaxed, and seemingly fainty, and his voice, which had been previously coarse, fell to a whisper, and could not be raised above it. The respiration, however, was not disturbed. I apprehended that the par vagum had been enclosed in the ligature, and felt half disposed to put on another a little below, and remove the first. The danger from the hæmorrhage was so pressing, that not having an aneurismal needle at hand, I had used a common one with the point foremost and passed from within outwardly. The hurry of this operation, and the obscurity of the parts from blood, made it impossible therefore to use the caution requisite to avoid the par vagum; and the sudden failure of voice led me to suspect this accident; but after watching the respiration for some time, it appeared to proceed so tranquilly that I determined to let the ligature remain, and especially as it answered so completely the purpose of arresting the bleeding. The operation being finished, and the parts bound up, the patient was sent immediately to the penitentiary in a carriage, and put under the professional charge of Dr. BACHE.

*July 12th.*—The patient is nearly well, his respiration is good, the voice is still in a whisper, though improving, and regaining its former tones; I think therefore that the cause of the feebleness of the latter must have arisen from turning off the supply of blood to the larynx through the upper thyroid artery. The ligature has come away.

In our common dissections of the carotid we find it in front of and against the muscles of the transverse processes. In this case I was surprised to find it much in advance of those parts; is this common, and is it produced by the muscles of the throat drawing it off?



## REVIEWS.

ART. IX. *The Library of Practical Medicine; published by order of the Massachusetts Medical Society for the use of its Fellows.* Vol. I. Containing a Treatise on Fever. By SOUTHWOOD SMITH, M. D.; and Clinical Illustrations of Fever. By A. TWEEDIE, M. D. Simpson and Clapp. Boston, 1831.

TO an indifferent observer, it might seem an easy matter to determine the value of any particular course of medical practice; especially would it seem easy to choose between the success of two causes, apparently so opposite as that of free blood-letting and other depletion on the one hand, and that of cordials and stimulants on the other. The object of all practice being to preserve life, and to restore health, that which does this with the greatest promptitude and certainty, and with the least inconvenience and suffering, is, of course, the best. Experience, therefore, which should tell whether the man who is bled and physicked, or he who is stimulated with opiates and tonics, gets well the quickest and the most assuredly, should teach which of these paths to health is to be preferred. If, not in regard to diseases generally, at least in reference to an individual disease, might he except such an appeal to experience to be conclusive. And if he were told that diseases of the same name, and possessing many features in common, often differ greatly in some essential parts of their character, and therefore require very different modes of treatment, he might then limit his inquiry to the single disease of acknowledged similarity of character, and expect with confidence that the facility of cure should be acknowledged as a sufficient indication of the proper treatment.

But when he pushed his inquiries a little further, he would find, even with all the limitations that we have supposed, if the disease be one of sufficient severity to require the interference of the physician at all, that some patients die of it, let the treatment be what it may. The self-confident boast of the *enterprising* young practitioner, which is sometimes met with, that he has never lost a patient, is very nearly equivalent to a confession that he has never had one. It obviously never was the design of Divine Providence, that man should live forever on earth; and the power of the healing art is not sufficiently great over any disease, to ensure that it shall never be mortal.

On the other hand, no disease is always mortal. Under every variety of treatment, and every neglect of treatment, some individuals recover from the most fatal of diseases. In regard to particular effects too, where a specific remedy has seemed to produce great results, the same results have appeared in other cases, where the remedy has been omitted. And the advocates of very different modes of practice, are found appealing with equal confidence to the success of their own method, as evidence that it is the correct one; nay, even the fact, that immediate relief follows the exhibition of a particular remedy, is no adequate proof that it conduces to the ultimate cure of these diseases.

Although it be true, therefore, that, as the object of all medical treatment is the restoration of health, that system of practice must be regarded as the best, which the most effectually promotes this object; yet the application of the principle is attended with so many difficulties, as to render it of itself alone, a very insufficient guide in choosing between different methods of practice.

The adaptation of remedies to the character of the symptoms of a disease, affords another means of judging of their suitableness to cure that disease. All our knowledge of such adaptation is, indeed, derived from observation of the effects of remedies in other cases. But in estimating these effects, the profession are more agreed in their opinion of the results, as applicable to particular symptoms, than in regard to the cure of diseases as a whole. For example, there are few men, (a few visionaries there indeed are even here, but they are very few,) who do not agree in regarding bleeding and other modes of depletion as the appropriate remedies for decided inflammation; although there might be much difference of opinion, whether a particular disease was, or was not, of an inflammatory character. So, too, in cases of true acknowledged debility, the greatest bleeder will unite with the most zealous advocate for stimulants, in prescribing tonics, however furiously they may quarrel about the causes of the debility. If then we even fix upon those symptoms which chiefly give a character to the disease, we may hope to find a clue to the true method of cure.

But in its practical application, this principle is not without its difficulties. To say nothing of the opinion, to which we have already alluded, of some who deny that blood-letting and other depletion is an appropriate remedy, even for true inflammation, (and surely little need be said of an opinion so opposed to well-established principles,) it is, in many cases, by no means an easy matter to determine what shall be regarded as the leading symptoms of the case; in other words,

to ascertain what is the primary affection, upon which the phenomena of the disease mainly depend. And when the seat of this primary affection is discovered, there may be much difference of opinion as to its character, whether it is inflammatory or congestive and requires depletion, or debility and demands exciting. It is not yet settled, that inflammation may not be so modified in its character, by complication with other diseases, or by other causes, as to require a mode of treatment very different from that which is ordinarily appropriate to it. And where the inflammation is genuine, so as to give rise to no doubt of this sort, it may, in many cases, produce so little excitement and so much immediate depression, as to be easily overlooked; or the inflammatory stage may pass over so rapidly, and give place to collapse and exhaustion so speedily, that it is not perceived. One physician, therefore, sees the case early, or looks back upon its early history, and discovers the inflammation, and bleeds the patient; another looking upon the later stages of the diseases, finds nothing but debility, and stimulates him.

*What* shall decide, "when doctors thus disagree." The appeal is made to the appearances exhibited by an examination of the body after death. This leads us to a third mode of ascertaining the proper methods of treatment. When the patient is dead, we may learn how we ought to have cured him. To state the matter more fairly, the appearances after death, go far to explain the true nature of the disease, and the causes of the phenomena which it had exhibited during life, and thus aid essentially in the application of remedies to analogous cases of disease. All this, these examinations may unquestionably do. But there are those, (and one at least of our authors is among the number,) who carry the matter much further, and make this mode of investigation paramount to every other. They would make the changes of structure and appearance exhibited after death the touch-stone, by which all the phenomena of disease are to be tried; and their causes ascertained, and the appropriateness of remedies tested.

There are objections to this mode of determining the question, especially when relied upon so exclusively. We are not always sure that similar appearances, as observed after death, proceed from precisely similar affections during life. Dr. Gooch has shown that children are occasionally subject to a disease, evidently the result of exhaustion, which produces stupor and effusion into the cavities of the brain, of the same appearance, except perhaps in degree, as that which succeeds inflammation of the membranes of the brain. And he quotes Dr. KELLY as having shown, by his own observations, and



those of Drs. SAUNDERS and LEEDS of Edinburgh, that in animals bled to death, more or less serous effusion was found in the head. Dr. K. adds "if instead of bleeding *usque ad mortem*, we were to bleed animals more sparingly and repeatedly, I have no doubt that we should succeed in draining the brain of a much larger quantity of its red blood; but in such experiments we shall I think, find a larger effusion of serum."<sup>\*</sup> In regard to other affections besides those of the head, it is not at all certain that similar observations may not be made. Our knowledge on this point is not yet sufficiently precise and established, to authorize us to rely entirely and exclusively upon its indications.

We return then to the question, what are the means by which we are to estimate the appropriateness and value of medical treatment? Has the physician no principles to guide him in his practice; or is the whole a matter of chance, as is so often "slanderously reported" of us? The answer to these questions is not very difficult, notwithstanding all we have said. The intelligent physician will not rest his judgment upon any one of the modes to which we have adverted, although the ardent theorist may often do so; but by a judicious observation of them all combined, he will not often remain long at a loss in regard to the true effect of remedies. The very fact that there are circumstances, which are liable to mislead him, if properly borne in mind, puts him on his guard and preserves him from being deceived. The man who upon the authority of a single case, announces a new remedy for an obstinate disease, would have saved himself from the mortification of a useless publication, if he had been content to wait a little, and make some further trials of its efficacy.

Medicine has its rules of evidence, as well as the law; and although not so accurately defined, nor so well supported, they are none the less necessary in order to arrive at just conclusions. One of the first of these is that a single case proves nothing in regard to the effects of medicine. The simplest rules of reasoning might teach us this; since we know nothing of cause and effect, in any case, but from the constancy of their relation to each other, and this constancy can of course be established only by a succession of similar occurrences. And yet, obvious as all this is, there is perhaps no more frequent cause of error, in our profession, than a neglect of this simple principle. How often do we see new, and sometimes strange

<sup>\*</sup> Account of some of the most important diseases peculiar to women. By R. Gooch, M. D. p. 368.

modes of practice, recommended and urged upon the ground of their success in a single case.

It is scarcely less necessary, before the value of a remedy or a course of treatment can be regarded as fully established, that its efficacy shall have been tested, by more than one practitioner. The influence of the imagination upon the powers of observation, and the judgment of physicians, is so great that few men seem to be capable of so accurate a discrimination between them, as to make it certain that another will obtain the same results from the use of the same means as himself. Until this is done, however, every new remedy must be regarded as, at best, but a promising suggestion. Not only our periodical journals, but the shelves of our libraries, are full of essays in commendation of modes of practice, always successful to a great degree in the hands of the author, which have so utterly failed in the hands of others, as either never to come into general use, or else to fall speedily into entire neglect.

Nor is it enough that the disease, taken as a whole, is removed. We must follow the action of the remedy into more detail. Every disease is made up of several parts; and the intelligent physician in prescribing for it, has in his mind, not so much the general object of restoring the health, as the more specific object of removing the particular derangements which constitute the disease. The empiric whose only remedy is rubbing, may in the energy of his frictions, rupture an abscess and thus remove the pain of which it was the cause; but it does not thence follow that violent friction is an appropriate remedy for pain and inflammation. This brings us back again to the adaptation of remedies to the symptoms of the disease; or rather to the particular affection of which the symptoms are the indication. Our knowledge of the true character of all diseases is not yet sufficiently complete to warrant us in rejecting every remedy, whose mode of action is not in accordance with our pathological views, provided its utility is established by an adequate succession of careful observations. But we may, and ought to, require a higher degree of evidence of the efficacy of such a remedy than of one which acts in direct consistency with what we know of the nature of the disease. For example, it has recently been proposed to trust the cure of croup to the use of opiates, either administered internally or applied externally. Now if it shall be shown by abundant evidence that opium is the most efficacious remedy for croup, we are not authorized to reject it, because we know this to be an inflammatory disease, and that opium is not under ordinary circumstances well suited to remove inflammation. But we surely may require stronger proof of its efficacy, to overcome

our incredulity than if the ordinary action of the remedy were in accordance with the nature of the affection.

There is one other consideration to which we must advert for a moment. It does not follow that because the immediate action of different remedies is widely different, or even opposite, their ultimate effects are so likewise;—that if one be well suited to the case, its opposite must necessarily be injurious. This is a point to which we apprehend, the attention of the profession have not been sufficiently directed. If it were more regarded many a rancorous dispute might be avoided. One physician bleeds his patients and uses other evacuates, and with such success as to convince him that the practice is correct. Another in the same epidemic abstains carefully from all but the most indispensable evacuations, and gives the most active stimulants, and relies with equal confidence upon the results of his practice, for proof that it is right. No two things can be more unlike than these two modes of treatment appear at first view to be, and it is no uncommon thing, unhappily, to see the advocates of each, treat their opponents with unmeasured severity, as incapable of correct observation, or regardless of human life.

But let us see if the two methods of treatment, however opposite they at first sight appear, may not be reconciled, so as in many cases to be nearly equally applicable to the same state of disease. There are some diseases which the most zealous advocates for antiphlogistic remedies acknowledge run so rapidly into a state of depression and debility, as to require, in some stage of their course, the use of stimulants. On the other hand, there are some few indeed, who see nothing in many diseases, but such a state of debility as to demand active stimulants from their commencement. We trust there are few such, however, and we give them up, as incapable of being reconciled to any rational system either of pathology or practice. There are many others, more reasonable men, who recognize the inflammatory character of most or all acute diseases, in their first invasion, and yet when they see the disease sinking rapidly into exhaustion, they think it better to meet it with stimulants in this second stage than to incur the risk of reducing the strength of the patient by an ineffectual attempt to arrest it earlier. Now these men, although in their practice, they may often seem to differ but little from the last, upon a careful observation of their principles and practice combined, will be found to approach much nearer to the first class, of which we have just spoken. Indeed, the chief difference between them is in reference to the precise period of the disease, at which antiphlogistic remedies should be laid aside, and stimulants assumed: And were



it not that men so readily take sides, and then unconsciously exaggerate both their own peculiarities and those of their neighbours, it would be seen that there is no occasion for any party feeling in the matter; that there is often room for an honest difference of opinion, without supposing either ignorance or eccentricity of character.

The most favourable result unquestionably, in any case, is to arrest the disease in its very commencement; and this of course is always to be aimed at, whenever there is any tolerable chance of success. But very often the time for such an attempt is gone by before the physician is called. It may happen, (very frequently it is so,) that the same general course of treatment, which at an earlier period would have broken up the disease altogether, will still be suitable to mitigate its severity and conduct it to a favourable termination. But in the case we are supposing, if the disease be not arrested thus early, then the remedies which should have done it, do not increase the exhaustion and hasten on a fatal collapse. It is obvious, in this view of the matter, that it will sometimes be a question of great nicety to determine in a given case when the first stage terminates and the second begins;—which course of treatment promises the best result, to endeavour to break up the disease by vigorous depletion, and thus prevent the debility which would otherwise ensue, but at the risk of increasing that very debility if the attempt to prevent it should fail,—or on the other hand, to support the strength by active stimulants, while the disease shall run its course. And this question may be so nicely balanced as to render the chances of success in either course nearly or quite equal.

In such a case as this whichever course of practice is adopted, it must be pursued exclusively and vigorously. Either extreme is here better than the mean. An insufficient bleeding, which does not effectually subdue the inflammation, may but increase the debility, and hasten on a fatal collapse; while a more efficient depletion might have arrested the disease and saved the patient. On the other hand, a moderate quantity of stimulants may but excite the morbid actions to greater energy, when a more free use of them would have roused the system to throw off the disease altogether. Hence, perhaps, the reason that the advocates of either mode of practice, almost always succeed but indifferently, if, at any time, they are induced to try the opposite mode; and are driven back to their former system with increased confidence in its great superiority.

From what we have seen of Dr. SMITH's theory of the essential character of fever, we are prepared to find him adopting a vigorous antiphlogistic course of treatment. The lancet is his main depend-

ence; and yet he does not expect a complete and immediate cure from the use of it. The following quotation gives a fair exhibition of his views on this point, and of the principles which he adopts as his guide in the treatment of the fever.

"The only morbid condition of fever, of which we have any knowledge, and over which the medical art has any controul is that of inflammation. Although, as has been so often stated, inflammation be not the primary febrile affection, as far as regards the order of events, yet it is, at least, the primary affection, as far as regards the treatment, if it be not the sole affection that admits of treatment. The remedies proper for febrile inflammation do not differ from those which are adapted to ordinary inflammation; but they differ materially in the mode in which they ought to be applied, and the extent to which they ought to be carried. They can be understood neither in their mode nor measure, until the following questions are determined; namely, What is the precise object that should be aimed at in the treatment of fever? What is it which it is most important to do, and which it is in the power of the medical art to accomplish? An exact and true answer to these questions will afford an invaluable guide in practice: it will point out with clearness what is to be attempted; and it will put a stop to useless and pernicious aims.

"It is in vain to hope to terminate fever by a stroke of art. The pursuit of a remedy, so long and so earnestly sought, endowed with the power of cutting short the disease, is to the physician what the search after the philosopher's stone was to the alchymist, with this difference, that the alchymist, engaged in a vain pursuit, lost only his time and labour; but the physician, engaged in a pursuit equally hopeless, will often, in addition, lose his patient. Fever cannot be cured instantaneously; and to bring a fever patient under the influence of agents capable of exciting a powerful influence upon the system, in the expectation of at once removing fever, is pregnant with danger; and the expectation upon which such practice is adopted, must appear fallacious to whoever has studied the nature of the disease.

"Fever cannot be cured instantaneously: it may be moderated; it may be gradually subdued; from being violent and dangerous, it may be rendered mild and safe: the physician may bring it to this condition; and this is all that he can accomplish. If it come under his care early, and he know with promptitude and decision at what to aim, he will rarely fail in his efforts to secure this object." pp. 221, 222.

If we are to be limited strictly to our author's definition of fever, all this is undoubtedly true. If the disease is not fever until the circle of deranged functions is fully completed, then of course fever as *fever* cannot be cured until the derangement has gone through the whole circle of function. This is no more than to say that a circle, to be a perfect circle must be entire in every part of its arc. Our author, however, could surely mean no such silly truism as this. But if he means to say that fever in the common acceptance of the term, is never cured in its very onset, so that the course of the symp-

toms is arrested, and the patient almost immediately regains his health, then he asserts a proposition, of great practical importance, to which we are by no means prepared to give our assent.\* Every physician, in even but moderate practice, must have often been called to a patient in the first hours of disease, whose symptoms all indicated an attack of fever; and by a vigorous application of remedies, has checked the disease, so that in a single day, nothing remained of it but a slight debility. Now, no man, it is true, can say with absolute certainty in any given case, that this disease would have gone through all the course of fever, without the intervention of medicine. But from the frequency with which such cases occur, and the entire similarity of their phenomena with those of the commencement of genuine fever, in cases not thus interfered with, we are surely warranted in regarding them as of the same general character. To say that this is not fever, because the disease is cured before all the phenomena of fever have an opportunity to develop themselves, is to adhere to a system of terms, at the expense of reason and truth.

Occurrences of this sort are doubtless much less frequent (perhaps they never arise there) in the wards of a hospital, than in private practice, for the obvious reason that the physician does not there see the patient till the disease is much more advanced. Dr. Smith gives a table of six hundred cases of fever in the London Fever Hospital, showing the number admitted on each day of the fever. Out of the six hundred, two only were received the first day, and but six on the second; and much more than half were as late as the seventh day. It is not surprising indeed that, after such delay in beginning the treatment, it should be impossible to do more than to mitigate the severity of the disease and conduct it to a safer and milder termination. Under more favourable circumstances for early treatment, however, we believe that very many attacks of disease, which, without such treatment, would have been full and complete fever, are cured in their very commencement. There is nothing in the profession which gives the physician so much satisfaction, and which so effectually consoles him for the disappointment of his best efforts in many more advanced cases, as the efficacy of his prescriptions in these early moments of violent disease.

It is, however, only in the earliest periods of the disease, that so favourable a result can be anticipated. After the train of morbid actions has become established, we fully agree with our author in the hopelessness of the expectation of entirely arresting it, by any remedies however active. It is not impossible, that in the intensity of his



pursuit of his leading subject, his language may express more than he really designed; and that on a cooler review of it, he would not a little qualify the opinion which it contains. Be this as it may, he certainly loses much of the force of the argument which follows in favour of energetic treatment, in the commencement of fever, by thus disregarding the most favourable result which such treatment is capable of producing.

It will be remembered that our author regards all the various forms or types of fever, as differing in nothing but the degree of their intensity. The treatment of fever therefore demands little modification to adapt it to the peculiarities of each case, except such as may be required by these different degrees of intensity. In the mildest form of fever, although there is, in his view, the same circle of deranged functions, as in the severer forms, yet the derangements are so slight that a cure takes place spontaneously in a few days. Rest, low diet, and mild purgatives are all that is necessary in the treatment.

But the mildest case may change to a severe one; or the disease may have been severe from the beginning. In either case, the cause of the increased severity is inflammation, "rising in degree, and increasing in extent, or both, in proportion to the intensity of the febrile affection."

"The object to be aimed at in practice, then, is clear: it is to prevent, or to remove inflammation. Accomplish this, the fever will not be cured at once; it will still go on for some time; but it will come sooner to a close, and it will proceed mildly and safely to its termination. Fail to accomplish this, and the fever, however mild at first, will increase more and more in severity, until it become truly formidable, and death take place at last, in consequence of the destruction of the organs by the process of inflammation.

"If excitement be set up in an organ which has as invariable a tendency to terminate in inflammation as a stone to fall to the ground, what is the proper remedy to prevent the transition of excitement into inflammation? Bleeding. Before we can say that inflammation is established we may foresee that it will come: if the preceding excitement be not stopped, we know that it will as surely come, as that blood will flow from a wounded blood-vessel."

"The physician, in the first stage of fever, armed with his lancet, is to his patient what the fireman with his engine, before the flames have had time to kindle, is to a building that has taken fire. At this early stage, the former can check inflammation with almost as much ease and certainty as the latter can prevent the flames from bursting out. On the contrary, the physician who is called to treat inflammation in the later stage of fever is in the position of the man who arrives with the apparatus for saving the house when its stories have been already consumed and its roof has fallen in.

"Bleeding in fever cannot be performed too early. The very first moment

of excitement, could that be discovered, is precisely the moment when the employment of this powerful remedy would produce the greatest effect. The earlier the bleeding, the greater will be the impression made upon the disease, and the less upon the patient; or, the more effectually will the inflammatory action be stopped by the loss of the smallest quantity of blood.

“When inflammation has actually come on, there is then not a moment to be lost; that inflammation must be stopped; the accomplishment of this object is the great end which the practitioner should aim at in every thing he attempts; until he has done this he has done nothing; until he has done this he ought to give neither sleep to his eyes nor slumber to his eyelids; until he has done this he ought to feel that there should be no rest for himself, because there is no safety for his patient. Until the inflammation is subdued blood must be taken; be the quantity it may be necessary to abstract, in order to accomplish this object, what it may; be the bleedings it may be requisite to repeat what they may; the vein must be allowed to flow, and it must be opened again and again until this object is secured.”

“Mere relief of inflammation is nothing; to render a severe inflammation a less severe inflammation is to do nothing; because the less severe inflammation may be fatal just as certainly as the more severe; the inflammation must be subdued, or the case, if not wholly lost, becomes dangerous and doubtful.

“The abstraction of blood must be carried to the extent of subduing the inflammation; there is no other limit to the quantity to be taken but that which is adequate to subdue the inflammation. To attempt to measure the quantity by drachms or ounces is wholly vain; because, if the remedy be properly employed, the quantity will vary in every individual case. To take an ounce more than the subdual of the inflammation requires is injurious; to take an ounce less is still more pernicious; to take the quantity necessary to accomplish the object, and no more, is to use the lancet—that powerful instrument, so dangerous in rash hands, and no less dangerous in weak—with the discernment and decision of a master. He who with a knowledge which gives and which justifies boldness and decision, is able thus to employ this great remedy, is a skilful physician, who has derived from study and experience the best fruit they can yield; he who has not yet reached this perfection of his art, (and who among us can pretend to the attainment?) must still go on to observe and to learn.” pp. 223, 224, 225, 226.

These several extracts give a comprehensive and pretty complete view of our author's system of practice during the active stage of fever. It is to bleed—bleed early—bleed repeatedly—bleed sufficiently.

“If, after the abstraction of sixteen ounces of blood at the commencement of the attack, the vascular excitement be not completely subdued, in the course of three or four hours, the same quantity must be again taken; and if the next morning, that excitement continue, it will probably have already passed into inflammation; and, therefore, the vein must be once more opened, and the blood allowed to flow until the pain, wherever seated, be entirely removed. To check the disease, instead of subduing it, does not in the least diminish its future strength, and, by weakening the powers of life, it even hastens the

period of mortality. Nothing is more common than the appearance of typhoid symptoms, on the second or third day after bleeding has done nothing but lessen the inflammatory action; whereas, had it been carried somewhat, and generally only a little further, the patient would have been convalescent at the very period when his danger becomes most imminent. In cases where general bleeding produces a decided impression on the inflammation, but does not stop it, cupping, or even leeches, will often complete what the lancet commenced." p. 227.

A due impression having thus been made upon the inflammation by bleeding, little more is necessary in the subsequent treatment but to let the patient get well. A purgative given so as to produce three, or at most four stools in the twenty-four hours is the only medicine. Beyond that number, he says, no advantage is gained by purging; more frequent purging weakens the patient, but not the disease. In addition to this—

"Cold sponging, if the skin be hot, acidulated drink, if there be thirst; perfect quiet, a dark room, a silent nurse affording prompt attendance, with a noiseless step, a cheerful countenance, and no words—this together with three tea-cupsful of thin arrow-root or gruel, in the twenty-four hours given in divided portions, at intervals of about two or three hours, comprises all else, that will be required, or that will be useful, until the period of convalescence." p. 227.

We should be doing injustice to the author's confidence in this course of treatment, and to his contempt for many other remedies which have occupied a large space in the practice of most physicians, if we should withhold from our readers the following note appended to the concluding paragraph on the general treatment.

"It would be trifling, while treating of so momentous a subject as the proper management of fever, which requires the prompt, vigorous, and yet cautious exhibition of the most powerful remedies, to spend any time in discussing the merits of saline, refrigerant, diaphoretic, antimonial medicines, and the rest of the apparatus which unfortunately continues to hold the place of direct, honourable, and well-earned, (if any thing can be well-earned,) remuneration to the practitioner." p. 228.

"Such," adds our author, "is the simple, but most efficient treatment appropriate to the common fever of London and its neighbourhood, (and I do not speak of the treatment proper for any forms of the disease as it exists elsewhere, and which I have not seen,) in its ordinary degree of severity."

Efficient, it most assuredly is, either for good or for ill; and simple enough too, it appears in the description. But in the application to practice, some questions must arise, which are not so fully settled. In the first place, how shall we know when to commence this course of bleeding? The mildest forms of fever, we are told, require little



or no treatment. But we are also told that "because the fever is moderate in the commencement, it is not to be presumed that it will continue moderate through its subsequent course," p. 223; that as certainly as we know that heat and smoke indicate the existence of fire, "with equal certainty we know that fever, though apparently mild in the commencement, will excite inflammation in vital organs, and that that inflammation, if it be allowed to establish itself, will place the fabric of the body in the most imminent danger." p. 224. The author himself with his great number of fever cases constantly about him, may have acquired a practical tact which shall enable him easily to discriminate between those mild cases which require little or no treatment, and those which so readily assume a very grave character. But simple as it may all be to him, we do not see that he has given us any clue to direct us. We are anxious to serve our patient, and as soon as we perceive that he has fever, remembering that although it is now slight, it may soon become severe, till we bleed him freely, and we find that we have used a powerful remedy for a disease that required no treatment. Again, we would avoid unnecessary practice, and seeing the case to be mild, we treat it with moderate purgatives, low diet, and the abstraction of stimuli, and when it is too late to retrace our steps or to repair the injury, we discover that inflammation has been creeping silently in, and we have lost the favourably opportunity to encounter it. We may be told that this difficulty is not peculiar to fever, but is inherent in the treatment of all diseases, and that it must be met by the greater watchfulness and circumspection. This is precisely what we would say. But, let us not hear of a treatment being *simple*, that requires such unceasing vigilance, and accurate discrimination. In truth, there can be no such thing as simplicity in practice, until diseases themselves become simple; and then, man may cease to be mortal.

In the second place, when we have begun this course of bleedings, we would gladly know where to stop. To bleed enough—to bleed till the disease is subdued, is simple enough in the direction—but it is vague and indeterminate in the practice. A very worthy physician of our acquaintance, a few years since put out a pamphlet to establish the value of bleeding in fever; and the only rule we could gather from it was, to bleed; if the bleeding did no good, bleed again that it might do good; if it did good, bleed again that it might do more good. At length he fell sick himself, (for physicians, as well as others, alas! are mortal,) not with fever, but with some chronic affection. He bled himself, and he bled again, and again, (for no one else could be found

to bleed him sufficiently,) and he died, at last, lamenting that if he could only have bled himself *once* more he should have recovered; but in his last attempt, a mist came over his eyes and his hand could not command the lancet; and he must die for the want of bleeding!

We do not accuse our author of so violent a mania for bleeding, as that of which our poor friend died; but we apprehend difficulties and dangers in his sweeping directions to bleed, bleed, which he seems not to fear. He will tell us, that his direction is simple; we are to bleed—not till the fever is cured—but until the inflammation is subdued. But what is the evidence that the inflammation is subdued? Are we not told again and again, that the marks of inflammation are often exceedingly obscure, that it advances silently and secretly, that when conquered on one day, it returns again the next, in the same organ, or in another organ? Shall we repeat the bleedings, so long and so often as there is a daily, or an occasional, exacerbation of the disease? Is there no danger that symptoms, which were at the first caused by inflammation, may at a more advanced stage be produced, or at least closely simulated, by a very different state of the system? This is a point which our author seems to have overlooked, but on which some light has recently been thrown by others; although much still remains to be learned in regard to it.

There is nothing more curious in the whole animal economy, than the manner in which causes which are widely different, or even opposite in their nature, sometimes produce results so similar in appearance, that the most experienced and accurate observers can with difficulty discriminate between them. We might instance the disease produced by an excessive use of mercury; how closely does it resemble that for which mercury is the appropriate remedy. We have already alluded to the fact, that animals bled to death, die with dropsical effusion in the brain. Dr. Gooch presents us with the history of a puerperal fever in which bleeding is speedily fatal, that must be distinguished from the inflammatory puerperal fever, more by the general history and habits of the patient, than by the immediate symptoms of the disease. The same author, as we have before remarked, has made us acquainted with a disease which in a similar manner counterfeits the inflammatory hydrocephalus of children, in which depletion is speedily fatal, and supporting is successful. And Dr. MARSHALL HALL, has followed out the same principle in an elaborate volume on the effects of blood-letting; which, if excessive bleeding were much more common, than we believe it to be among us, we should regard as of great practical value.

What is the inference that we are to draw from all this? Not, surely, that bleeding, free and repeated bleeding, is not a proper remedy in fever; but that in the application of this so powerful a remedy, more care and caution is necessary than our author seems to recommend. We shall be told again that all the circumstances of the case, and of the constitution of the patient, must be kept in view. And again we reply that this is precisely what we would say. And we repeat again, that the treatment is not to be called *simple*, which demands such vigilance and circumspection. There is, and there can be, no such thing as *simplicity* in the treatment of diseases, so long as diseases themselves are so various and complicated.

It adds in no small degree to the complication in this case, that the immediate relief afforded by bleeding, is not of itself decisive evidence, that that bleeding was either useful or safe. It is the *ruling principle* of Dr. M. Hall's essay to which we have referred, a principle which we think he, and others, have fully established, that the exhaustion of excessive depletion may be followed by a reaction which shall give rise to symptoms, precisely analogous to those of inflammation. And these symptoms will be relieved for the time by another bleeding, although that other bleeding shall be the cause of their return, (if sufficient energy is left in the system to admit of further reaction,) with increased violence. The proper time for bleeding in fever, according to Dr. Smith, is in the early stages of the disease, when there would be less danger of confounding inflammation with the reaction of exhaustion. But he does not restrict his bleeding to the early periods. In cases where there has been no early treatment, or where that treatment has been insufficient, we find him bleeding, either from the arm, or by cupping, or by leeches, on the 6th, 8th, 10th, and sometimes so late even as the 20th, 26th, and 28th, days of the fever. This practice appears more fully in Dr. Tweedie's clinical illustrations, for Dr. Smith gives us but a very small number of cases in exemplification of the treatment of fever; his attention being more directed to the pathology. We are justified however in turning to Dr. Tweedie's cases for the purpose of illustration, since, as we before explained, the cases are used promiscuously by either author, and many of them are repeated in detail in the two works. We here find venesection the 10th day, repeated the 11th, cupping the 12th, leeches the 18th, and repeated the 21st, p. 329. In another case we have venesection the 14th day, leeches the 16th, cupping the 18th, again the 21st, leeches the 26th, and death the 29th, p. 333. In still another, we have leeches the 15th day, venesection the 16th,



cupping the 17th, leeches the 18th, and death the 21st, p. 342. And in some of the cases, the bleeding, although it was begun earlier in the disease, in respect to the number of days, is continued still nearer to the time of death. We were much struck in reading these cases, by the similarity in the phenomena of some of them, to those of some of the cases produced by Dr. Marshall Hall, to illustrate the effects of blood-letting. It was our intention to have quoted one or two cases from each, by way of comparison; but the length of our remarks warns to abstain.

It should be borne in mind, however, in reading Dr. Tweedie's cases, that the plan of his work gives us the results of the treatment in a peculiarly unfavourable view. The cases of successful treatment are not related; while all the fatal cases, occurring during the year, are given in detail. Indeed we can never form any just estimate of the efficacy or appropriateness of the treatment, by comparing the general results, with similar results in a different course of treatment, under other circumstances. The tables in this volume give a full view of the degree of success, exhibiting the whole number of deaths in connection with the number of cases under treatment; and every practitioner may if he pleases make the comparison with the success of his own practice in similar diseases. But while on one hand the Fever Hospital gives great advantages in the management of the disease, in respect to the constancy of attendance, and the certainty of good care and nursing, on the other hand it has the usual disadvantages of a hospital, as compared with most private practice, of late application, separation from friends, &c.

Dr. Smith does not himself rest his confidence in the correctness of his treatment of fever, upon any such comparison of the results with those of other modes; but upon the pathology. After a striking, and we fear but too just, a description of the effects of an inert or an inappropriate treatment in the early stages of the disease, he exclaims—

“I appeal to the attentive observer, whether this be not a faithful history of the progress and termination of hundreds of fever cases; whether such a history may not be recorded as of daily occurrence; whether what has been stated be not commonly the view, the practice, the result, and the lesson.

“I will not appeal to the different history that belongs to cases that are differently treated. But I do earnestly appeal to the pathology that has been stated; that, at least, is experience, and it teaches a lesson, which it is worse than foolish to despise or to forget. Every symptom just enumerated, has been detailed over and over again in the cases that have been laid before the reader; inspection after death must have made the conditions of the organs, as indicated by those symptoms, familiar to his mind. Of what avail can bleeding be, when

the patient is brought into the condition which first excites alarm, in the case here supposed? The blood is no longer in its vessels; it is beneath the membranes, or in the ventricles, or at the base of the brain; the inflamed capillaries have done their work upon the cerebral substance and upon its membranes; and have left proof enough of their activity in the thickening of the one, and the softening or the induration of the other. What can blood-letting do in this state of the organs? What can shaving the head, and applying cold do? What can blisters do? What can purgatives do? And, above all, what can wine do? Nothing can be done; at least nothing effectually or certainly." p. 229.

We have already given what we deem sufficient reasons for not trusting so exclusively as our author does to these views of the pathology of fever. We might enlarge upon this subject, and ask upon his own view of the matter, if fever be a modified inflammation, how knows he that the treatment which in this state, inflammation demands, be not modified also? But although he claims on this point, more than we think is satisfactorily proved; yet he has established enough, and more than enough. We should hope, to overthrow that irrational and destructive system of practice, which we fear, still prevails but too much in some parts of this country, of giving stimulants through the whole course of disease, simply because the disease is attended by debility. We have with difficulty repressed our indignation, when we have seen brandy and cayenne, and cantharides, and opium, (and all these we have known exhibited in company, and sometimes arsenic with them,) mixed up together to drive off a debility, in the onset of acute disease, accompanied by vertigo and coma; as if the oppression of all the sensorial powers could do otherwise than produce debility! And our regret for the extremes, to which, as it appears to us, our author has sometimes carried his opinions, proceeds less from any apprehension that an excess in blood-letting is likely to prevail among us, than from the fear of losing something of the just influence of his observations upon such gross and dangerous absurdities as these.

It is in the condition referred to in our last extract, ("and," he adds, "perhaps it is the only condition,") Dr. Smith allows that stimuli are beneficial in fever. The change of structure, he supposes, produced by the inflammatory process, may not have proceeded to such an extent as to be absolutely incompatible with life; and yet the powers of life be so exhausted as to require the aid of stimulants to save them from being quite overpowered. For this purpose wine or brandy are the stimulants he prefers. Indeed, here as elsewhere, his list of the *materia medica* is exceedingly simple. We would not quarrel with him for this, if instead of actually turning all the less

active remedies out of doors, he had been content to assign them their subordinate place. To be dabbling with refrigerants and diaphoretics, where bleeding and cathartics are required, or to give the lighter tonics in cases which demand the higher stimulus of wine or brandy, is indeed but trifling with disease, instead of curing it. But there are gradations in disease as well as in other things; and it is idle to do nothing, because we are not required to make use of the most active agents within our reach; or to refuse the aid of milder remedies when those which are more energetic have but partially effected a cure. The medicines which our author rejects with so much contempt, may be no proper substitute for bleeding and cathartics; but it by no means follows that they may not be made useful coadjutors.

Our author's predilection for simplicity of practice does not carry him so far as to lead him to disregard the appropriate remedies for peculiar modifications of fever; although we still find the same preference for efficient, energetic treatment. In the cerebral affection of fever, he makes use of what he calls the *cold dash*, the continued application of which, he says, no degree of burning heat which the animal economy is capable of producing, no intensity of vascular action, and no violence of pain can resist.

"It consists of pouring a column of cold water upon the head in a continued stream from a height of from six to ten feet. The mode of applying it is as follows. The patient is seated in a large tub; a table is placed at the side of the tub upon which a man stands, and at as great an elevation as his arms can reach, pours upon the naked head of the patient a steady but continued stream of cold or iced water, from a watering-pot without the rose. The stream is made to fall as nearly as possible upon one and the same spot. At first, the elevation must be slight, for the shock is too violent if the stream be poured at once from the highest point." p. 335.

This remedy is not to supersede the use of the lancet; but when added to that, our author, in his usual ardent, sanguine manner, says "it forms by the combination, a treatment so powerful and efficacious that it might render death, from the acutest cerebral inflammation, as rare, as recovery is at present." The concluding paragraph on the treatment of the cerebral affection is so perfectly characteristic of the author's style of thinking and practice, as well as of writing that we quote it, more on this account than for its subject matter.

"Cold applications to the head, and evaporating or iced lotions, are useful in mild cases; they may keep up the effect produced by this in the more severe,



but to hope to controul the latter by their aid alone, is to expect to coerce a giant, by twisting around his arms a spider's thread." p. 337.

^ In severe thoracic affection Dr. Smith uses the tartarized antimony in the manner recommended by LAENNEC for pneumonia. Blood-letting for the bronchial affection of fever, he says, is of little avail. It weakens the patient without making a decided impression upon the disease. In these cases, the tartarized antimony, given in doses of two grains, dissolved in an ounce of water, every second, third, fourth, or sixth hour, according to the severity of the disease, seldom fails.

For the abdominal affection when that predominates in fever, our author has no peculiar method of treatment to recommend. Although general bleeding, "if employed early and with due activity," will prevent the inflammation of the mucous membrane of the intestines "which forms so constant and formidable a part of the organic affection of fever," it will have little influence over it, after it has occurred. Leeches, poultices, and the other common remedies for this affection, are chiefly relied upon.

After commenting so freely as we have done upon some parts of this work, it is difficult to express our real opinion of the work as a whole without some appearance of inconsistency. For notwithstanding all we have said, we do regard it as one of the best treatises on fever in our language. His theory of fever does not satisfy us. But there is a clearness and a vivacity in his descriptions, which are exceedingly engaging. He brings before us his collection of observations, and although he doubts not for a moment, that we shall all draw the same conclusions from them that he does himself, he does not attempt to force us, by distorting them. In his practice too, he is watchful and attentive, and to a considerable extent, discriminating, notwithstanding his excessive love for energy and decision. In fine, although we would not recommend his work as a safe guide to be implicitly followed, (and what work can be so recommended?) yet there is much in it, that must excite the attention of the profession, and on the whole we should hope, greatly improve the general style of practice in febrile diseases.

The faults of the work are those of a young practitioner. When the author shall have seen a few more years of practice; and especially when his practice shall have extended more into a different class of patients, we doubt not he will see reason to qualify not a little some of his positions. In the mean time, those whose experience will enable them to make the qualifications for themselves, will still find

enough, for which they are indebted to him, to induce them to regard his work with no small share of complacency and approbation.

The *Clinical Illustrations of Fever*, by Dr. Tweedie, is a work of great interest and value. His opportunities for an extensive observation of the disease were very similar to those of Dr. Smith; and the two publications contain as we have seen, a narration of many of the same cases. Yet the plan of the two works is so different, that they do not in any material degree interfere with each other. Dr. Tweedie's is a very modest, unpretending sort of a book; but it abounds with most important matter. It is a collection of facts, deduced from his own observation, with little of theoretical speculation; and only just enough of generalization to connect the different parts of the work together. It gives a history of fever as it appeared under the author's care during eight years that he had been one of the physicians of the London Fever Hospital—a description of the phenomena, as they were exhibited at the bedside, and of the treatment pursued, and of the results of the treatment; and a minute history in detail of all the fatal cases which occurred in one year, with the appearances on dissection of all those in which an examination was permitted.

It would be doing great injustice to our opinion of this work, to infer its relative merit, as compared with its twin-brother, by the length of our remarks upon each. For permanent practical value, this is in no degree behind the other, and in many points of view, it is decidedly superior to it. But besides that our critical propensities are somewhat exhausted by the length of our remarks upon Dr. Smith's treatise, the nature of this work, consisting as it does of statistical and practical details, hardly invites criticism or admits of analysis.

E. H.

ART. X. *Treatise on Puerperal Peritonitis*. By A. C. BAUDELLOCQUE, M. D. &c. &c. to which was awarded the Prize of the Royal Society of Medicine of Bordeaux. Translated from the French, by G. S. BEDFORD, M. D. Lecturer on Obstetrics. New York, 1831. pp. 478. 8vo.

WE have selected the present work for an analytical review, both because the disease is one of too frequent fatality, and but little studied by physicians generally, and because we believe it presents a pretty complete view of what is now known respecting the disease treated of, presented in a clear and philosophical manner. There are in fact no diseases about which there exists a greater discrepancy of medical opinion, or which are involved in more embarrassing speculations, than those of the puerperal class; and we hail with pleasure an attempt "to determine by clinical facts, those cases in which the different modes of treatment prescribed in peritonitis are applicable." This question will not be regarded with indifference by those who have witnessed the frequent unsuccessful application of remedial means, or who are desirous of properly appreciating the resources of art in combating a dangerous malady.

*Etiology*.—The causes of puerperal peritonitis have been divided into predisposing and efficient; but this distinction cannot always be recognised in practice, and would, if adopted, lead to useless repetition. It is therefore rejected.

1. *Changes which pregnancy effects in the organism*.—It has been remarked by Pezos and other authors, that upon conception a change takes place in the humours; a portion of milk is discovered in the blood, which is carried to the uterus for the nourishment of the child. The excess, deviation, and sometimes the bad quality of this milk, according to these writers, is the source of most of the diseases that occur during pregnancy, and the puerperal period. This change in the blood, they say, is apparent on bleeding a pregnant woman, the coagulum being covered with a whitish pellicle, more or less thick, resembling the inflammatory coat. Sometimes it is only perceptible by the opaline colour it imparts to the blood. The blood likewise, they maintain, has a very large proportion of serum; hence the frequency of serous infiltrations. Effusions in the inferior extremities may sometimes be occasioned by a diminution of pulmonary perspiration, owing to the impeded circulation through the lungs.

Though we admit the fact of a change in the humours, as above described, yet we cannot allow that it has any agency in producing



puerperal peritonitis. This condition is always connected with the existence of pregnancy, in all places and seasons and under all circumstances; yet this disease does not attack indiscriminately, nor is it of uniform frequency and danger. To the objection that in this condition of the humours the exciting causes owe their efficacy, we may remark that there should result from this something peculiar in the nature and progress of the disease, whereas we see nothing in it but what is met with at other periods of life and among children and men. Besides, we believe that a phenomenon constantly connected with the accomplishment of a certain function, should be favourable to the proper execution of that function, and not that nature has associated with the performance of one of her most important acts, a danger inherent in the very essence of that act. The most we can admit, is, that there may result from this state of the fluids, a slight modification in the diseases consequent on pregnancy and delivery, as, e. g. a more abundant effusion in inflammations of serous membranes, and more copious critical evacuations.

Gestation is attended with sanguineous plethora, and this has been advanced by some as one of the causes of peritonitis. It however rarely occasions any accidents, as nature possesses so many means to remedy it during and after labour; and besides, we do not understand how it should favour the development of this disease, rather than that of any other inflammatory affection.

Another species of morbid influence, as maintained by some writers, is the pressure of the gravid uterus on the abdominal viscera; but this cannot be considered as having any considerable agency in the production of peritonitis. Much importance has been attached to the changes which pregnancy determines in the peritoneum, causing its distention and increase of surface, and a corresponding increase of action and vitality. The more active the organic movements are in any part, the more predisposed this part will become to disease. In this manner the peritoneum may be so modified, as to be liable to take on diseased action, whenever circumstances concur to derange the healthy functions.

Peritonitis is not an unfrequent occurrence after delivery, when an actual or latent chronic affection has existed during pregnancy or previous thereto. Interesting cases are detailed in illustration, to which our limits only permit us to refer.

II. *The operation of labour*.—It is the opinion of DELAROCHE, DOUBLET, OSIANDER and HUFELAND, that puerperal peritonitis occurs most frequently in females who have had a very prompt delivery, and this doctrine is supported by an aphorism of HIPPOCRATES. It

is satisfactorily ascertained that the peritoneum is susceptible of inflammation after the easiest and shortest labour, precisely as it is after one of difficulty and extreme duration. We have reason to believe that a predisposition to the disease already existed in those females, who, having previously been subject to some chronic affection, are seized with peritonitis after labour; that there is a particular condition of the solids and fluids, not recognised by our powers of observation, which leads to diseased action. The use of instruments, and the introduction of the hand into the uterus, are likewise frequent causes of peritonitis; especially is to be apprehended when there occurs any laceration of the parts. According to M. DUCAS, of four hundred and fifty-six cases of puerperal fever, thirty-two were in consequence of artificial parturition. This disease is also often excited by efforts to bring on abortion or premature labour, by blows and other external injuries, and by too great compression of the abdomen after delivery. The presence of a putrid fœtus in the uterus is another cause of peritonitis, and the danger seems proportioned to the degree of decomposition. A case is detailed in proof of this, in which the perspiration had a fœtid odour for several months, which our author attributes to an absorption of putrescent matter into the maternal circulation. A profuse loss of blood seems likewise often to precede this disease. This fact is fully established by Madame LA CHAPELLE, who states that nearly all those who were attacked with hæmorrhage in consequence of the placenta being attached over the mouth of the uterus, fell victims to an inflammation of the peritoneum. To these we may add the plugging of the vagina, the forced action of the uterus, the employment of refrigerants and astringents, &c. as efficient causes, especially in hospitals and infirmaries.

III. *The regimen pursued during pregnancy, and particularly during and after labour.*—This cause is one of great efficiency, especially among the lower classes, where privation is followed by revelry and intemperate gratification, in which wine and liquors are freely drank. The foundation of peritonitis is often laid by the use of acrid, irritating remedies, emmenagogues, violent drastics, &c. exciting drinks during labour, and the ingestion of solid aliment afterwards are highly dangerous.

IV. *Suppression of the lochia.*—This has been regarded as a very serious accident and capable of generating the most fatal diseases. We frequently see inflammations developed after the suppression of hæmorrhoidal, catamenial and epistaxial discharges, and analogy would seem to show that the same may also occur after the derangement of the lochial evacuation. While we admit that such effects may

follow, yet in general we regard this suppression, as the effect rather than the cause of puerperal peritonitis. It is remarked by DELA-ROCHÉ that the most alarming symptoms of puerperal fever manifest themselves without being preceded by any alteration in the quantity or quality of this evacuation, and on the other hand that it becomes suddenly suppressed, without being followed by any serious consequences. It also sometimes happens that the flow of the lochia is not deranged during the progress of peritonitis. WHITE assures us, that he has often observed, that women whose lochial discharge was most abundant, appeared more disposed than others to what are denominated putrid fevers. The return of the lochia previous to convalescence, which is thought by many to prove the efficiency of its deranged secretion, must generally be attributed to a favourable change in the malady, as a return of the cutaneous, mucous (&c.) secretions, indicates a favourable crisis in all febrile affections. A belief in the contrary doctrine, has led to a fatal practice in the administration of excitants of various descriptions, under the name of emmenagogues, &c. &c.

V. *The suppression of the secretion of milk.*—Milky metastasis. WILLIS first particularly called the attention of physicians to this cause, since whose time, it has too generally been regarded as of primary importance in the production of peritonitis. Puerperal diseases received the name of milky deposits, and in causing inflammation, it was supposed that the milk instead of finding an outlet at the breast, was taken into the circulation and deposited in the peritoneal cavity. The treatment was predicated on this theory, hence the origin of anti-lactic remedies. It is now ascertained that the disease may appear before the existence of the milky secretion, and even before delivery. Indeed it is maintained by TISSOT, that pregnancy causes such a change in the vessels, that they are capable of converting chyle into milk without the coöperation of the mammiferous glands. Such theories are not worth opposing. The doctrine receives no support from chemical analysis; besides, the secretion of milk often continues during peritonitis. It may be retarded, or suppressed at the commencement of the disease, and reappear during its progress, without producing any material change in the condition of the patient. Again the disease is sometimes cured, long before the milky secretion returns. It is maintained by the partizans of the theory of milky metastasis, that women who nurse their children are less subject than others to attacks of peritonitis, that the act of sucking arrests it, and that the re-establishment of the secretion is followed by a speedy cure of the disease. Now, admitting these positions to be true, which we do not,



an explanation may be found in the circumstance, that the mammae became a centre of action, and by concentrating the vital forces offer an obstruction to any improper direction these forces might effect. By this revulsive action, the act of suckling may check a slight and incipient peritonitis, but should the disease be intense, such an effect would not be likely to follow. On the contrary, however heretical the doctrine may appear, lactation may become the cause of peritonitis, under certain circumstances. (For proof of this assertion, see cases detailed on p. 84-5, &c.) Experience then, abundantly proves that there is often not the slightest connexion between recovery and the restoration of the milky secretion. When peritonitis or any other violent disease commences, the part becomes an attractive centre of action, the cutaneous, mucous, serous, biliary, urinary, as well as the milky secretion, become checked or entirely suppressed, and as soon as the disease has lost its intensity, the equilibrium becomes again restored, and the secretory organs resume their appropriate functions. It is not however to be supposed that the suppression of the milk never produces any serious consequences. It has undoubtedly caused peritonitis, when occurring suddenly from some moral emotion, or from the use of astringents and local cataplasms. Its danger has been on the whole, much overrated, though its occurrence is not to be overlooked or disregarded.\*

VI. *Constipation*.—Constipation not unfrequently attends sporadic peritonitis. It is difficult sometimes to determine whether it should be regarded as cause or effect. Peritonitis may occasion constipation by checking the secretions; and the collection of faecal matter may, on the other hand, cause this disease, either from mechanical disten-

\* In opposing the doctrine of milky metastasis, Baudelocque quotes the following case from the General Journal of Medicine. "A latter, thirty-nine years of age, of strong constitution, fickle and very irritable character, had experienced for an hour and a half vertigo, weight and uneasiness in the head, particularly about the posterior part of the base of the cranium, when he sent for my learned colleague Dr. Collisecare. He was immediately bled from the right arm. The blood as it passed from the vein, was thick, of a light, dirty red, and in proportion as it cooled in the basin, it was changed to a sort of marble and whitish-red colour. Some drops which fell upon the floor became white in a few instants, and presented the aspect of *chocolat au-lait*. In an hour and a half a clot of ordinary size was formed, surrounded by a large quantity of a *whitish, opaque fluid, precisely similar to milk*." We have observed the same appearances lately in a patient, a carman, whom we bled for an attack of pleuritis. The blood falling on the floor, was mistaken for milk, and the whole serous part of the blood, on cooling, could not be distinguished in appearance from milk. We regret that we did not subject it to chemical analysis.

tion, or the evacuation of gas. WHITE and DENMAN attribute considerable agency to this cause.

VII. *Retention of urine*.—This retention is not very rare after delivery. There are some cases recorded of rupture of the bladder and of effusion, which were promptly fatal.

VIII. *Retention of the placenta in totality, or in part; of clots more or less numerous; of the lochia*.—Peritonitis from any one of these causes, owes its origin to the absorption of putrid matter into the circulation, reacting on the most sensible part. This effect is not a necessary consequence, but the frequent result of such phenomenon. White has probably exaggerated the frequency of this cause of peritoneal inflammation, and he was led into it from the fact of finding, on opening such as died of the disease, a layer of putrid matter lining the interior of the uterine cavity. We may remark, that this deposit is not peculiar to those who have fallen victims to peritonitis; it is likewise found after death from other diseases. It is the result of a peculiar action, which takes place on the inner surface of the uterus, designed to place this organ in the situation it was in before conception.

IX. *The moral affections*.—It is truly remarked by DELAROCHE, that the passions and emotions of the mind, particularly those accompanied by fear, are among the most evident causes of peritonitis. When it prevails epidemically, it often happens that the receipt of bad news, censure, the sight of disgusting objects, &c. will be followed by its invasion. “I have several times remarked, at the *Maison d’Accouchement*, that the grief experienced by certain females, when their children were taken from them to be placed in the Foundling Hospital, became, in a few hours, the cause of peritonitis; and the same thing we sometimes observe in private practice, when the nurse carries to her home the infant, without our being able to discover any other cause than the inquietude of the mother with regard to the welfare of her child, and the sorrow she experiences on account of the separation which has been deemed necessary.”

X. *Climate and seasons*.—“The coldest countries,” says DOUBLET, “are those in which delivery is followed by the most fatal consequences. In England a much greater proportion of women die in child-bed than in France; in Italy, however, there is still less fatality than in France; and the same holds true as we advance further south.” M. SAVARY remarks, that in Egypt, puerperal diseases are unknown. According to statistical tables, kept at Hôtel-Dieu and the *Maison d’Accouchement*, it appears that peritoneal inflammations were the most frequent during the autumnal and winter months. In accounting for this fact, some discard the notion of temperature, and look to the humidity or dryness of the atmosphere as the cause; while others

deny their agency altogether. During some years, puerperal fevers are more prevalent during the summer months, as we find by consulting the tables of TENON. Of four epidemics of puerperal peritonitis, which Dr. CLIER observed at the general hospital of La Charité, at Lyons, one commenced at the end of May, 1819, and continued till the month of September of the same year; another occurred in the spring and summer of 1821.

**XI. Change of the atmosphere.**—A vitiated atmosphere from want of ventilation and crowding together too many patients in a room, is one of the most efficient causes of epidemic peritoneal inflammations. PEU, who first mentioned this cause, expresses himself as follows:—

“A learned physician, M. Vesou, told me, that in the year 1664, he was sent for by M. De Lamoignon, first President of the Parliament of Paris, and consequently first director of the Hôtel-Dieu of that city. He desired to know the cause of the great mortality of the lying-in women of the above hospital. It was suspected, or at least feared, that it arose from negligence on the part of the persons in charge of the institution. The mortality was observed to be the greatest in certain periods and seasons. The difficulty was soon explained. The physician above alluded to, opened several of these unfortunate women, and they were found filled with abscesses. He examined with great care into the cause of this, which in fine he attributed to the disadvantageous situation of the place, or rather of the ward of these females; which was immediately above that of persons suffering from wounds; so that the infectious vapours which arose from the sores and ulcers of these wounded bodies, generated an impure and malignant atmosphere. This atmosphere, continually ascending, was respired day and night by the lying in women; they were afterward affected with a sanguineous flux, which continued until their death. The deaths among the women were proportioned to the number of wounded in the lower wards. The warm and humid atmosphere, or cold and humid, was incomparably more injurious than the warm and dry, or the cold and dry, during which the vapours did not make so strong an impression, either on the air, or the patients. In a word, this great mortality did not occur when the females were in a ward below the others,” &c.

A collection of women, recently delivered, is more pernicious than that of other individuals under ordinary circumstances, on account of the fecal and lochial evacuations, and copious perspiration, evolving injurious exhalations; while by respiration, the vital portion of the air is abstracted, and its place supplied by a poisonous gas, highly debilitating in its effects. If we consult the history of lying-in institutions, we shall find that the mortality augments with the number of confinements in a ratio far superior to the number itself. Our author doubts the contagiousness of puerperal peritonitis, yet acknowledges, that it would be the part of prudence, to always act on the supposition, that the disease is contagious.



XII. *Embarras gastrique*.—By this term we are to understand the presence of impure matter in the *prima viæ*, colluvies, &c. This deranged state of the digestive organs may only be considered in the light of a predisposing cause.

The author sums up his remarks on the etiology of puerperal peritonitis with the following conclusions.

1. "That we cannot deny the changes effected in the humours of the female after conception; that these changes must not be regarded as depending on the presence of milk, nor as capable of generating peritonitis.

2. "That sanguineous plethora, so common in pregnant women, does not merit much importance, considered as a cause of peritoneal inflammation after accouchement.

3. "That the compression and distention of the peritoneum are not to be regarded as causes of peritoneal inflammation; that its distention can, at most, only render it more accessible to the action of the morbid causes, and impart greater danger to the disease.

4. "That severe pregnancies do not more dispose to peritonitis than those exempt from every species of accident.

5. "That when at the moment of accouchement, the woman is attacked by an acute or chronic disease, we frequently see this disease complicated with peritonitis.

6. "That inflammation of the peritoneum may occur after a labour the most prompt and easy, equally well as after one which has proved the most tedious and severe.

7. "That the introduction of the hand or instruments, in order to terminate the labour,—violence done to the uterus or the abdominal parietes, sometimes gives rise to this phlegmasia, which is inevitable after the Cæsarian operation, and the rupture of the uterus.

8. "That a dead child remaining in the uterus disposes the woman to peritonitis.

9. "That great losses of blood, and the means necessary to arrest them, sometimes become causes of peritoneal inflammation.

10. "That the suppression of the lochia and milk are more frequently effects than causes of peritonitis, and that their metastasis is by no means demonstrated.

11. "That constipation, retention of urine, putrefaction of a part of the placenta, and of clots of blood which have remained in the uterus, may generate peritonitis.

12. "That the moral affections of every kind, particularly those accompanied by fear, though their effects have been much exaggerated, may occasion peritonitis.

13. "That cold climates and seasons predispose to this disease; and that, without attributing to cold air, whether dry or humid, all the influence which has been ascribed to it, we must admit that a partial or general chilling of the body has been frequently followed by peritoneal inflammation.

14. "That the alteration of the air, its vitiation by deleterious miasmata is

greater or less abundance, is the most frequent cause of puerperal peritonitis in hospitals, in which it prevails epidemically.

15. "That facts appear rather against than in favour of its contagious character; that, however, the present state of science authorizes doubts upon this point.

16. "That the existence of putrid matter in the *primæ viæ* has no very evident influence in the production of puerperal peritonitis."

*Symptomatology.*—The symptoms of puerperal peritonitis vary according as the disease is sporadic or epidemic, and are modified by the nature of the predisposing and exciting causes. It is generally ushered in by a chill, sometimes slight, and of so short duration as scarcely to be noticed; at other times it is extremely violent, and the whole body is agitated. There are instances, as in the epidemic described by CLARK, where the disease commences without any chill, but in such cases there is great general lassitude, and a peculiar disregard of the patient for her offspring. These symptoms usher in an usual heat of skin, with cephalalgia, thirst, frequent pulse, and what is characteristic, either constant pain over the abdomen, or great tenderness on pressure. The distress generally commences about the loins, extending gradually to the hypogastrium and abdominal cavity. The patient can lie only on her back, the pains being increased by the slightest motions of the body, or pressure on the abdomen; even the weight of the bed-clothes becomes intolerable. Tumefaction succeeds, following the course of the pain, being sometimes general, at other times partial. The frequency of the pulse increases, the respiration is accelerated, the jugular veins swell from the impeded pulmonary circulation, the thirst becomes more annoying, the tongue at first soft, moist, clean or coated, soon becomes red, especially on its edges, dry, and recoils on itself. The countenance indicates great suffering, constipation or diarrhœa may attend. The lochia is deranged, the milk suppressed, the abdomen becomes shrank and wrinkled, the urine is small in quantity, and of a deep colour, depositing a whitish, mucous sediment. The anxiety is extreme, and when the disease terminates fatally, all the symptoms increase in severity until a certain period, when they suddenly subside, the patient feels more comfortable, but the vomiting of matter, at first yellow, then green, becomes troublesome; a clammy, cold sweat, suffuses the forehead, face, and thorax; there is aberration of mind, then delirium; the extremities become cold, and assume a livid colour; the features are changed; the pulse is scarcely perceptible; and at length death closes the scene.

Such is the general course of peritonitis, where it terminates fa-

tally. The symptoms of course vary in different cases, but the *tout-ensemble* is such, as generally to leave an excuse for a mistake in the diagnosis. When the inflammation of the peritoneum is confined to a small portion, the disease assumes a milder form, and has a character less distinctly marked; the patient daily experiences a slight chill, an evening exacerbation of fever, failure of strength, sleeplessness, emaciation, vomiting, diarrhoea, &c. Effusion sometimes occurs, or suppuration, which is speedily followed by death. Our author dwells at length on this part of the subject, but our limits forbid a more copious abstract.

*Complications.*—Puerperal peritonitis rarely exists in an isolated state. It is most frequently complicated with pleuritis, and then it is always attended with danger, and often difficult to recognise. It is generally characterized by great oppression, frequent pulse, and throbbing of the jugular veins. There is an obtuse pain behind the sternum, little cough, and much distress on motion; and as auscultation and percussion can rarely be practised to advantage in such cases, owing to the increased volume of the mammae, the pleuritic affection is rarely discovered, till revealed by autopsic examination. The pressure to which the lungs are accustomed during pregnancy renders the difficulty of respiration occasioned by pleuritis less sensible; the sac of the pleura finds but little resistance in the ribs and diaphragm, and the result is a more limited and less rapid compression of the lungs.

Another frequent complication of peritonitis is inflammation of the womb. Some authors believe that peritonitis ordinarily commences in the uterus, but dissection proves that in sporadic cases, at least, the uterus remains in a healthy condition. When inflammation, however, primarily attacks the uterus, it is apt to be propagated to the peritoneum, though this complication cannot always be determined by the symptoms. There exists an affection of the uterus, rarely met with, unaccompanied by puerperal peritonitis, especially when epidemic, designated by BAER by the term *putrescentia uteri*, and by others *ramollissement*. This complication is always fatal, and is detected only by its rapid progress, and the most dangerous symptoms at the commencement. The neck of the uterus imparts the sensation of cold to the touch, and the pains may be violent or entirely wanting. By this affection the tissue of the uterus is converted into a homogeneous, livid, brown or blackish pulp, with no trace of organization, and of a foetid odour.

Another not unusual complication is inflammation of one of the synovial membranes. It is met with particularly in the articulations



of the hand and knee, and sometimes also in those of the elbow, shoulder, hip, and feet. Sometimes the signs of inflammation are absent during life, even when pus is found in the membranes after death.

Another affection coëxistent with peritonitis, is *phlegmasia dolens*, which is simply an inflammation of the lymphatic vessels. This is a tedious and not unfrequently a fatal complication.

*Enteritis* sometimes exists simultaneously with peritonitis. This is usually fatal, and not easily detected by symptoms.\* The disease runs its course rapidly, and on dissection, the intestinal mucous membrane is found red, thick, and ulcerated.\* There are other rare complications not worthy of particular notice.

*Prognosis.*—According to Delaroche and Duges, four-fifths of the women who die in child-bed, are victims of this disease. The danger varies according to a variety of circumstances. The chance of recovery is much greater if the patient has a good constitution, labours under no other disease, has been accustomed to a sufficient quantity of wholesome, nourishing food, and finally has not lost a large quantity of blood at the time of accouchement. HULME remarks that the disease is most fatal among those females who have suffered from constipation during pregnancy. Epidemic cases are more generally fatal than sporadic. Of thirty-nine cases of the former at the Hôtel-Dieu, thirty-six ended in death; and of twenty-five cases in 1811 at the same hospital, twenty-three died.

Puerperal peritonitis, according to our author, consists in an alteration of the fluids, especially of the blood, manifesting its existence principally by the inflammation of serous membranes, existing in fact previously to the inflammation. On the other hand, LEGOUAIS and others regard this change in the fluids as consecutive, and the result of a purulent diathesis, produced by the absorption of pus effused in the peritoneum.

The danger of peritonitis from an internal cause will be proportioned to the severity of this cause, and to the degree of alteration in the fluids.

During the year 1821, two thousand three hundred and seventy-four women were delivered in the Maternité at Paris. Of these, fifty-one died. Of twenty-seven cases of peritonitis occurring in the month of January, twenty-one were cured; in February, there were twenty-six cases, and twenty-one cured. These cases were considered sporadic. • When peritonitis develops itself soon after delivery, or the symptoms succeed each other with great rapidity, the prognosis will always be more or less unfavourable. While some regard

tenderness and tension of the abdomen, as indicating the degree of danger to be apprehended, others consider the state of the pulse as furnishing the most certain signs for the prognosis.

“By carefully attending to the state of the pulse and respiration,” says Hulme, “much may be learnt respecting the fate of the patient labouring under this disease. If the pulse be very quick, and the respiration frequent and small, it portends great danger. If, on the contrary, the pulse becomes slower, the breathing more free and full, it is a certain sign of a change for the better. A quick pulse, singly considered, is at all times a dangerous symptom, and the more so, if very weak and small.—*So infallible is the beat of the pulse, with respect to number, that though all the other symptoms should abate, and the disease seem to be gone off, yet, if the pulsations do not decrease in proportion, a relapse, or some other disorder, is to be apprehended.*”

An abundant diarrhoea indicates great danger, and when accompanied by abdominal swelling, still greater; whereas, when the discharges are scanty, and followed by a diminution of pain, tension, and inflation, with a slower pulse, it is a mark of safety. Spontaneous vomiting in the latter stage of the disease is an unfavourable symptom, especially when the matter ejected is of a brown, green, or black colour. Aphthæ in the fauces and mouth, according to Delaroché, announces a fatal termination, while the restoration of the suppressed secretions points to a favourable termination of the disease. The complications of peritonitis render the disease more alarming, in proportion as they are themselves more dangerous. In short, “*acutorum morborum non omnino tutæ sunt predictiones, neque mortis, neque sanitatis.*”—(Hipp. Aph. 19. Sec. 11.)

*Lesions observed in the peritoneum after death.*—These vary according to the severity, duration, and termination of the disease. When it is severe, and terminates fatally within forty-eight hours, we find a general redness of the peritoneum with one of the following states. -

1. The peritoneum is either smooth and to appearance dry, covered, however, as will appear on close inspection, with a thin layer of purulent, whitish, concrete matter; or 2. The peritoneum is humid, and a small quantity of thick, reddish fluid is observed in the hypogastric region. Sometimes several portions of the peritoneum and part of the epiploon present a grayish-brown colour, are detached by the slightest contact, and emit a cadaverous odour, indicating gangrene. When peritonitis has continued several days, the redness is less general and distinct; there are spots of a brownish-marbled appearance, and the peritoneum is covered by a layer of homogeneous pus, one or two lines in thickness. More frequently this membrane contains in its cavity a considerable quantity of fluid, clear, yellow-

ish, green, orange, or opaline in appearance. The gas which usually causes the abdominal inflation, is generally contained in the intestines, sometimes in the peritoneal cavity. In the midst of the effused fluid, flocculi are observed, more or less abundant, of a fibrinous nature, though formerly considered albuminous. They are ordinarily found in the ovaries, Fallopian tubes, broad ligaments and fundus of the uterus, adhering to, and often covering them to a great extent. Doublet calls them a collection of coagulated matter, floating here and there, and adhering to the intestines. At other times, these particles extend from one point to another, circumscribing certain parts, and forming several small cavities, becoming organized serous membranes, with equal consistence as that of the peritoneum itself. In the midst of the fibrinous particles floating in the effused fluid, we sometimes observe detached portions of the epiploon, which have become gangrenous. They are of a grayish colour, break under the finger, fall into decay, and exhale a remarkably putrid odour. Instead of the fluid and flocculi above described, we sometimes find a grayish, turbid matter. When death occurs at a later period of the disease, there may be found no effused fluid, but in its place an organized membrane, lining the peritoneum, of greater or less thickness, presenting red points, and yellowish-red striae, anastomosing together, assuming the appearance of vascular cords. The thickness of this fibrous layer becomes gradually diminished, forming at length a thin, transparent membrane, and finally disappearing in great part or entirely. In the midst of the intestines agglutinated to each other, we occasionally observe cavities, containing a liquid, clear and limpid, and at other times purulent. We sometimes remark in the substance of the false membranes, small collections of a concrete, purulent matter, analogous to tubercles; in other subjects there are real tubercles developed in the sub-peritoneal cellular tissue—sometimes whitish, puriform granulations, described by BICHAT, BAYLE, and M. BROUSSAIS. Perforations occasionally exist in the peritoneum, which, by extending to other parts, establish a communication with the exterior, through the abdominal parietes, or with the intestinal cavity and even the bladder. These communications are in the form of narrow, sinuous, oblique canals, so that the effused fluid may easily flow out, but returns with difficulty.

In epidemic peritonitis we often meet with lesions in other organs, as pus in the veins of the ovaria and uterus, the latter being softened and interspersed with small purulent collections; sometimes a gangrenous odour is exhaled, and the ovaria are limpid, red and brown,



or grayish, and softened to a pulpy mass. Gangrenous patches are sometimes observed about the neck of the uterus, or in the vagina, and not uncommonly we meet with pus distributed throughout the peritoneum, or collected in masses. Lesions are not unfrequently found in remote organs, as the lungs, pleura, &c.; these vary according to the genius of the epidemic, and the previous condition of the patient.

It was believed, for a long time, that the fluid effused in the peritoneal cavity, was of the nature of a *milky deposit*. MERCURIALES, WILLIS, PUZOS, LEVRET, SELLE and DOUBLET, have supported this opinion, which is based, however, only on external appearances, the fibrinous portion bearing a strong resemblance to the caseous part of the milk; a similar matter was known to exist in cases of peritoneal inflammation, both among men and children, and yet it was regarded as milk, and the cause of disease. The doctrine of milky deposits has been generally abandoned, since the experiments of Bichat on the serous membranes. These experiments have been repeated with the same result, by LAENNEC, BAYLE, DUPUYTREN, DESERIN and GASC in France, by PEARSON and DAVY in England, and by JAQUIER and KASTNER in Germany, and the theory of milky metastasis is consequently exploded. Analysis shows that the liquid part of these serous effusions bears a close analogy to the serum, and the solid portion is composed of fibrine with a small proportion of albumen. Saccharine matter exists in all kinds of milk, but none has ever yet been discovered in the effusions under consideration. The deleterious properties of this effused matter are well known—no wounds are so uniformly dangerous as those received in examining the bodies of women who die of this disease.

*Prophylaxis.*—The prophylactic treatment of a disease depends essentially on an exact knowledge of the causes by which it is produced. Proper diet, pure air, a mild temperature, a bed not too heating, a regular state of the bowels, cleanliness, diluting drinks; these are the principal means to be regarded during the puerperal state. Delaroche attaches great importance to the use of lavements after accouchement, in preventing the formation of puerperal fever; others with more doubtful propriety recommend laxatives. Blood-letting has also its advocates as a preventive of this disease, but it is to be employed with the greatest caution, and only in cases of palpable necessity. It has been said that those women who nurse their children are less exposed to this disease than others, but, according to our author, such require as much care and attention as those who do not nurse. Nothing is more important than a well-ventilated apart-

ment. The danger of crowding a large number of patients, especially of puerperal women, is too well known to need but a bare mention of the fact.

*Treatment*.—As there have been great varieties of opinions respecting the nature of puerperal peritonitis, so these have led to as great a difference of treatment. Some authors have recommended antiphlogistic remedies, others have prescribed emetics, or purgatives and sudorifics. Some have had recourse to tonics and antiseptics, others place their chief dependence on revulsives; many have adopted methods of treatment which they have regarded as specific—oil of turpentine, subcarbonate of potash, and the different mercurial preparations. From hence we conclude that the disease either presents itself under various conditions and aspects, or that we are yet but little advanced in what regards its therapeutics. Both of these suppositions would appear to be well-founded. In some epidemics, the same fatality has followed directly opposite modes of treatment. At the hospital of Vienna, in 1795, JAEGER says that not one cure was effected, though various remedies were employed.

*Sanguineous evacuations*.—From the days of Hippocrates, who was an advocate of bleeding in this disease, to the present time, the medical world has been nearly equally divided respecting the propriety of this agent. The truth is, that as in other diseases, so in this, there are cases where bleeding is highly useful and indispensable, and also where it proves injurious and even fatal. In sporadic peritonitis from external causes, blood-letting is the most useful remedy we can employ, proving more efficacious in proportion as we resort to it soon after the attack of the disease. HULME, DENMAN, LEAKE, and LEGOUAIS imagine that bleeding is not proper after the first period of the disease, embracing the first twenty-four hours. There is certainly no disease in which the stages succeed each other so rapidly as in this, and in which the first period is so short. Moreover when the inflammation has reached a certain extent, several stages are to be passed through which are indispensable to the reëstablishment of health, and to do this, nature requires strength. If we impair the vital forces when we cannot change the progress of the disease, we bring the patient into a dangerous state. This remark is applicable to bleeding, after the first stage is past, and should not deter us from using the lancet in the commencement. The second period is moreover characterized by the existence of an unnatural effusion. At first the serous membranes pour out an abundant serous exhalation, not differing from that of health, but this becomes absorbed, and its place occupied by a fluid of very different qualities.

It has a turbid appearance, is mingled with fibrinous particles, and often resembles pus. Now, if sanguineous evacuations have not arrested the disease in its first stage, if we repeat them, we favour the absorption of this fluid, which becomes more dangerous, as the system is enfeebled. This effect of bleeding, taught by VAN SWIETEN, has been demonstrated by the experiments of MAGENDIE. It is objected that the absorption of this fluid is necessary to health; granted; but does it hence follow, that it is proper to favour this absorption, when the entire organism is in such a disordered state as to endanger the life of the patient. If it take place at a later period, the system will have power to throw it off by the excretions and critical deposits in proportion as it is taken up. As to the period, beyond which bleeding is not to be used, no specific rule can of course be laid down which will be applicable to all cases. Instances may occur, when venesection may be proper, even several days after the invasion of the disease, and we are not therefore to be governed by a rule, which limits us to certain hours. A pleuritic affection may set in several days after the invasion of the peritonitis, which may demand the loss of blood. In forming an opinion, therefore, of the expediency of this remedy, we must take into view the general strength of the patient, the stage and intensity of the disease, its rapidity; and all those symptoms which denote acute peritoneal inflammation, remembering always that the earlier it is resorted to, the more benefit we may expect to derive from it.

As to the quantity of blood to be drawn, as a general rule it should be large, sufficient in fact to arrest the progress of the disease *in limine*, and thus prevent its reaching the second period. We shall be convinced of the necessity of this, when we consider the violence with which the disease commences, and the extent of the inflamed surface. Dr. GORDON recommends the abstraction of from twenty to twenty-four ounces in the beginning of the disease, having found that when this was practised early the patient generally recovered. In regulating the quantity drawn, we should regard the constitution of the woman, and whether she has been injured by a severe pregnancy, privation, antecedent disease, or by hæmorrhage. Care must be taken not to be deceived by the extreme frequency and smallness of the pulse, as these are characteristics of the disease; and it will be found to become more developed, and to lose its frequency after sanguineous evacuations.

In sporadic cases, blood-letting promises more benefit, than when the disease prevails epidemically, when it is to be employed with more caution. As to the expediency of repeating the operation, if the pulse



should continue corded and hard, and has not increased in frequency, it will be adviseable after a few hours again to have recourse to it, but if after the first bleeding, the pulse becomes more frequent, soft and smaller, and at the same time the pain and swelling of the abdomen increase, we should be particular not to repeat the evacuation. Some authors have attached much importance to the appearance of the blood, as furnishing a sure indication to govern us in the use of the lancet.

But the grayish pellicle of the blood observed in peritonitis, is common to the puerperal state, and is not therefore characteristic of puerperal fever. The state of the pulse and abdomen are the only guides on which we are to depend. Some practitioners prefer leeching or cupping to general bleeding, as not causing so great debility, and as abstracting the blood from the capillary system, taking it directly from the diseased organ, by the communications existing between the skin and subjacent parts.

In the majority of cases, bleeding from the arm is preferable to leeches, as we can better regulate the quantity of blood drawn, and as the advantage of revulsion which they are supposed to effect, is generally counteracted by the cold which accompanies their application. If bleeding is indicated, drawing blood from the arm, does not favour the development of adynamia, any more than leeches, if on the other hand, it is contraindicated, leeches will be less injurious than general bleeding. If pain and tenderness remain, in one or more points of the abdomen, after an abatement of the symptoms, then leeches can be applied to advantage, but they should be employed in sufficient quantity to produce the desired effect. Sanguineous evacuations should be accompanied with emollient, diluting, acidulated drinks, such as the infusion of marsh mallows, barley water, flaxseed tea, gruel, lemonade, &c. &c.

*Emetics.*—The employment of emetics in this disease, has been advocated by WILLIS, WHITE, HULME, LEAKE, STOLL, and FINKE; and all our readers, probably, have heard of the famous *method of Doucet*, physician to the Hôtel-Dieu, who received a handsome remuneration from the French government in 1782, for his success in combating puerperal diseases. This consisted in the administration of fifteen grains of ipecacuanha on the appearance of the first symptoms of the disease. This dose was repeated at an interval of an hour and a half, and followed by a potion, composed of two ounces of the oil of sweet almonds, one ounce of the syrup of mallows, and two grains of Kermes' mineral. If necessary this course was repeated. This he maintained, prevented the *deposit from forming*, and thus

preserved the life of the patient. On this plan, out of more than two hundred patients, attacked with this disease, only five or six died.

It was not long, however, before this remedy, like many others, was found to prove unsuccessful, and during the months of November and December 1782, as many as six and seven a day died of peritonitis at the Hôtel-Dieu, notwithstanding the greatest care in the administration of the pretended specific. DOUBLET is a decided partizan of this mode of treatment, and HUFELAND has prescribed it; our author however says, he does not remember a single case in which he could attribute success to it. He does not, however, subscribe to the opinion of BOILSEAU and BROUSSAIS, that it should be entirely proscribed, but would recommend it whenever the tongue is thick, pale, humid, and covered with a thick, yellow or green paste. It then should be employed, rather to combat an accidental complication, than to subdue the peritonitis itself. Cases are detailed to prove the efficacy of *Doulcet's method*, but they establish no general conclusion as to the success of this mode of treatment, and as for ourselves, we impute whatever success may have attended it, to the revulsive movement in the economy occasioning a change in the deranged functions, and equalization of excitement and distribution of the fluids. We regard it therefore, as occasionally a useful adjuvant to other means.

*Purgatives.*—These ought never to be regarded as the principal agents in the cure of peritonitis. They are useful only as auxiliary means, and as such, are recommended by WHITE, PUZOS, HULME, DENMAN, STOLL, CHAUSSIER, GORDON, HEY, and others. We often find sanguineous evacuations followed by little or no benefit, until the alvine contents are freely evacuated, when frequently we observe a marked amendment in all the symptoms. It is objected to purgatives, that they add to the peritoneal inflammation by their irritation. This fear our author pronounces to be entirely chimerical, as each tissue possesses a proper vitality of its own, and has its own particular irritants. Nothing, he observes, is more common, than to observe the muscular and mucous membranes in a perfectly sound state; while less than half a line distant, the peritoneum is the seat of a profound alteration, red, covered with pus, and even affected with gangrene, and *vice versa*. Others regard the existence of diarrhoea as a circumstance contraindicating the use of purgatives. This objection is pronounced to be more specious than real. In the same proportion that an abundant diarrhoea is one of the most alarming symptoms of puerperal peritonitis, is a moderate diarrhoea advantageous. When the case terminates fatally, the critical evacuation is insufficient, from the severity of the disease. The beneficial action

of purgative remedies in peritonitis, may be attributed to their revulsive effect, or derivation on the mucous membrane of the intestinal canal.

The particular cathartics recommended are, castor oil, rhubarb, magnesia, sulph. soda and potash, calomel, &c. Lavements are to be used as auxiliary means.

*Sudorifics.*—These are considered of very little importance in the treatment of child-bed fevers, and their employment inconsistent with answering other indications. When occurring spontaneously, perspiration should be considered as critical, and by no means to be disregarded. Warm diluting drinks are the only internal remedies of this nature recommended by our author. Stimulating diaphoretics are by all means to be avoided.

*Tonics and antiseptics.*—In an epidemic peritonitis, which prevailed at Lyons, 1750, M. PONTEAU administered large doses of camphor with extraordinary success. He regarded the inflammation as of the erysipelatous kind, and necessarily requiring tonic remedies. He gave it in the form of an emulsion, with oil of sweet almonds, water and syrup, adjusting the dose to the exigencies of the case. Since then, it has been employed with success in Austria, by BURSERIUS, and in France by DOUBLET and DELAROCHE, combined with bark. To these authorities in favour of tonic remedies, we may add STORCK, FAUKEN, LEAKE, WHITE, KIRKLAND, JOHN CLARKE, and HAMILTON. DELAROCHE remarks—

“It is in a city like London, where certainly inflammatory diseases tend rapidly to gangrene, and particularly in extensive hospitals, that I would wish prudent and enlightened practitioners to test this method; and I am much deceived, if they do not obtain sufficient success to warrant a repetition of it.”

It is therefore in *epidemic puerperal disease* alone, that camphor and bark have been employed successfully—where the disease is owing to an alteration of the fluids, and to the absorption of deleterious miasmata. In such cases, there should be administered at the commencement of the disease, and in sufficient quantities, repeated at proper intervals. Twenty grains of camphor in the first half hour are often required. Quinine at the present day is a preferable form.

*Blisters and other cutaneous revulsives.*—Blisters are rarely employed at the present day in the treatment of puerperal peritonitis.

“It is very certain,” says John Clarke, “that in this disease, they augment the irritation to a surprising degree, and render the pulse more frequent than it was before. They appear to diminish for a short time the painful sensation; but this relief is only momentary, and is not sufficient to authorize their use, because their bad effects counterbalance any advantage we may expect to de-



rive from them. In one case, an application of blisters on different parts was proposed, and the patient recovered; but a similar treatment in other instances, far from producing the same effects, destroyed all the hopes inspired by the success of one particular case."

With this opinion, DELAROCHE and RECAMIER, who employed them extensively at the hospital of St. Louis, fully coincide, and our author rejects their application to the abdomen, thighs, or elsewhere, during the first period of the disease. They may be useful after effusion in promoting absorption. Sinapisms are of little use. Warm cataplasms of flaxseed to the feet and legs, and an envelope of warm flannel, are highly proper as revulsives.

*Cold effusions.*—This was introduced into practice at the Hôtel-Dieu, by SIGAULT, after all other means had entirely failed, but without any great success. Hufeland recommends the application of cold to the abdomen, when there is considerable tumefaction; but our author would only advise recourse to it when other remedies had failed, or as adjuvant to other means.

Our author treats of the use of the subcarbonate of potash, and the oil of turpentine in this disease; but as the results obtained from their employment are thus far unsatisfactory, we pass on to the consideration of,

*Mercurial preparations.*—These have been employed for a long time in the treatment of inflammatory affections. In 1764, Robert Hamilton prescribed them with success in hepatitis, pleuritis, and fevers of lying-in women. The honour of introducing into France the mercurial preparations, as the principal means of treatment in puerperal peritonitis, belongs to Dr. VANDENZANDE, Professor in the Hospital of Anvers. He commenced in the acute stage, combining opium and henbane with calomel, and giving it in such doses as to cause salivation as speedily as possible; where this was attained, a speedy cure was generally the result.

"On the first day," he observes, "we prescribe twelve or fifteen grains of calomel, with an equal portion of the extract of henbane, and if judged proper, one or two grains of opium. Fomentations and demi-lavements, of the decoction of poppy heads, and the bark of mallows or flaxseed, repeated every three or four hours, are so many emollient sedatives, which are carried to the nearest possible point of the seat of the disease; they moreover have the advantage of preventing frequent intestinal evacuations, provoked by the calomel, as well as by the vomiting so difficult to arrest. We continue this medication until the pains are notably diminished, which scarcely ever occurs before the third day, and the state of the pulse and febrile symptoms indicate resolution. This last is almost always announced as we have already remarked, by a slight swelling of the gums, and the other marks of approaching salivation."

For calomel, mercurial frictions are sometimes substituted, or em-

ployed as auxiliaries, especially in cases of obstinate diarrhoea or vomiting, using from ℥ij. to ℥iv. during the day.

Since the publication of the memoir of M. VANDENZANDE, mercury has been extensively employed in France, in the treatment of puerperal diseases. Its use has been generally preceded by sanguineous emissions. BAUDELOCQUE remarks, that he has witnessed the good effects of this plan of treatment in cases which appeared desperate, but that more frequently, it happened that the patients died without any indication of salivation, after having used several ounces of mercurial ointment and several drachms of calomel. According to his experience, salivation is a certain indication of convalescence, though cases are detailed in the medical journals, in which death occurred notwithstanding its development. After effusion has commenced, mercury is decidedly advantageous in arresting that change in the fluids consequent on the absorption of the effused fluid. In puerperal epidemics, where blood-letting is injurious, calomel may be combined with camphor and quinine. As the black oxyde of mercury acts more rapidly on the salivary glands than any other preparation of this metal, it may be substituted for them. The *modus operandi* of mercury is as yet involved in doubt. While HUFELAND, RICHTER, &c. maintain that it has the property of diminishing the *plasticity* of the blood, others regard it as a direct debilitant—by some its action is resolved into pure revulsion, by others into an excitant of the lymphatic system. All we know however is, that analysis has detected it in the blood, lymph, and glandular secretions, thus confirming the researches of FOURCROY, DUMERIL, ORFILA, and CRUVEILHIER, who detected mercury in the bones, in the cerebral mass and the nerves. Salivation is to be considered merely as an indication of mercurial action on the economy.

*Auxiliary remedies.—Warm baths.*—Though theory appears at first view favourable to warm baths, from their usual tranquillizing and relaxing effects, still they rarely, if ever, prove useful in peritonitis. The pain in this disease is so intense, that the slightest motion augments it, and the patient generally finds her sufferings increased while in the bath. To this is added the danger from exposure to cold air and other accidents usually encountered. They are absolutely dangerous, when there is great difficulty of respiration and considerable inflation of the abdomen. Cataplasms, fomentations and injections are useful auxiliaries in the treatment of peritonitis, and should never be neglected. Cataplasms of flaxseed meal, rice, or bread, with a decoction of mallows, poppy heads, &c. applied over the abdomen are highly beneficial, when the sensibility is not too

great to support their weight. We may in some cases substitute for them with advantage, narcotic fomentations, mercurial frictions, an ammoniacal camphorated liniment, or the oil of turpentine. Dr. Goode assures us, that since he has employed cataplasms of flaxseed, placed between two napkins, and applied to the entire abdomen, puerperal peritonitis is no longer regarded as contagious or even serious. Our author thinks it very clear, that Dr. G. knows very little about puerperal fever, and will soon have to abandon an opinion not in accordance with experience. Where there are shreds of putrefied placenta remaining in the uterus, injections of a decoction of barley, mallows or quinine will be proper. Repose of body and mind are of the greatest importance. If diarrhoea attends and is immoderate, rice water, sweetened with the syrup of quinces and the white decoction of Sydenham, may be given, and if it prove insufficient, an opiate should be added. Cases attended with an obstinate vomiting of a brown, greenish matter, are usually desperate, and should be combated with carbonated waters, cold drinks, blisters, opiates, &c. In excessive inflations of the abdomen, camphor combined with nitre, or given in lavements in the yellow of an egg, has been used with some success, also magnesia and lime water, cold fomentations, the application of ice, and finally mechanical means. Where extensive effusion exists, an operation may sometimes be adviseable to evacuate the fluid, though absorption is the most advantageous method. In chronic peritonitis mercury is particularly useful. In convalescence the patient should use a light nourishing diet, together with some bitter decoctions, especially quinine.

We have thus given a condensed summary of M. Baudelocque's work, aware of the disadvantage of not being able to present our readers with a detail of cases illustrative of our author's principles and mode of practice. Those, however, who wish to become better acquainted with the etiology and treatment of this hitherto mysterious disease, will doubtless avail themselves of the work, of which we have given an imperfect analysis, as it contains a faithful summary of our knowledge of this affection up to the present time. The indefatigable translator deserves our thanks for the able and accurate execution of his task, and if in some instances greater elegance of expression might have been attained, yet we cheerfully yield this consideration to the greater excellence of truth and faithful adherence to the original.

C. A. L.



XI. *An Account of some of the most Important Diseases peculiar to Women.* By ROBERT GOOCH, M. D. From the Second London Edition. 8vo. p. 326. Carey & Hart, 1832.

IT was observed by Dr. WATTS in his work upon the mind, that it is necessary for the clear and entire comprehension of an author to make oneself first acquainted with his preface and conclusion. Whatever objection may be made to the universal applicability of this precept, is certainly well suited to the book and author before us. Dr. Gooch was for a long period of years a highly respected practitioner of the obstetric art in the city of London, and enjoyed much reputation as a public teacher on the same branch in St. Bartholemew's Hospital. The conclusion of his career, for he has recently died, was in keeping with the prior part of his life. To the last he was a most intelligent and observing practitioner of his favourite branch, and physically as active in the performance of its duties, as his habitually infirm health would allow. Perceiving at an early period the vast importance of observation and reflection, and indeed their indispensibility to the formation of a good practitioner, his attention would seem to have been strongly directed towards seeing and acting for himself. Not, however, eschewing books entirely, but sacrificing in them what unfortunately seems to be considered by too many their chief utility, the using them as a means of saving themselves the trouble of reflexion and observation, by reading the sentiments of others. No individual certainly, ever became *successful*, in the *legitimate* meaning of the term, or truly eminent, in any department whatsoever, who did not consider what had been recorded by his predecessors, more as precious materials, affording the highest incentive to subsequent exertions, than statutes fixed and unchangeable like the great physical laws of nature. Books, however, must be to all of the most unquestionable utility, inasmuch as they might prevent the misapplication of much useful time, in a new attempt to establish facts already sufficiently substantiated, and to which every observer would be liable in his initial exertions. Through the medium of books, the course of science is maintained in one uninterrupted and expanding stream, like a mighty river, which begins at a humble fountain, and accumulates in force and quantity by the successive addition of small currents which flow to it from every direction. The course of science, like the stream, is a single track. He who would conduct along it human minds, is bound to take up the voyage, not at where others have started or passed by, but if possible where the last successful

explorers had left off. Without perusing the charts, which such had left behind them, many would most probably spend their lives in fruitless exertions, and perhaps reach no further on the course. Books therefore are necessary to all, as the focus into which is concentrated all the knowledge that is developed in the different regions of the globe: to him who is unwilling to take the trouble to reason deeply for himself, the only source of human knowledge beyond the superficial indications of the external senses.

With equal power and will for reflection and observation, the enjoyment of superior opportunities will enable some to surpass others in usefulness. Such, we allude to those who hold stations in extensive hospitals and infirmaries, or in large cities as extensive practitioners, owe an important debt to the profession and the public generally, which all are not sufficiently anxious to discharge. Let us on this subject observe what is said by Dr. Gooch in his preface, which is characterized by the possession of much of that useful material good sense.

“I was formerly physician to the two Lying-in Hospitals of Westminster and London, and Lecturer on Midwifery at St. Bartholomew’s Hospital, and I have for many years been extensively employed in the practice of obstetric medicine; thus I have had the best opportunities of acquiring a practical knowledge of this branch of our profession, and the strongest motives for collecting and arranging it into a shape suitable for communication. I do not say this in a tone of exultation, for I have little reason; on the contrary, the thought of the opportunities I have enjoyed is always accompanied with the painful reflexion, how imperfectly I have used them. This has depended partly on not knowing their full value, when I first came into possession of them, but chiefly on a course of ill health; and I write this preface, principally to persuade those who come after me, to turn their great opportunities to a good account. If I knew a young man placed in such a station, in whose eminence founded on his professional utility, I felt interest, I would say to him, remember that your station is one that can be enjoyed by a very few; do not consider it as one of lucrative conspicuousness, but as a trust which Providence has confided to you, and which you will neglect, unless you do your utmost to improve your branch of medicine. He who has the care of a lying-in hospital is a lecturer on midwifery, and is resorted to by the public as an obstetrical physician, has opportunities of acquiring knowledge in and extending the bounds of obstetric medicine, which no other surgeon, physician, or general practitioner can possess whatever may be his talents.”

After encouraging the physician, most strenuously to observe and think, and take notice both of his cases and of what he reads, he observes—

“Make yourself perfect in the art of examining dead bodies; accustom your hand to open them, and your eye to detect with accuracy morbid appearances.”

"Five years industriously spent in the way which I have advised, *provided you have a mind adapted to investigation*; will make you more competent to advise and act, in the difficulties and diseases of your branch of the profession than most persons you come in contact with, and than many a man far older than yourself; and after ten years so employed you will find yourself in possession of materials in a state fit to be produced, of various degrees of value."

The author has justly considered, that more real benefit would be conferred upon his readers, by his treating copiously and precisely of a few points, which had been too briefly or obscurely and inadequately described, than by hastily running over the whole round of obstetrical science, as is too frequently done in the systematic works of medicine. In so doing, too, he enjoys the advantage of selecting his topics, and would naturally be disposed to take up those of which his observation and reflexion best qualified him to speak. What he has adduced, he says, "I have not related from books, but from my own personal experience; even in the most common-place parts I claim to be more than a compiler." From the preface of this author, the reader will, we think, look with interest to the perusal of his book, with a well-grounded expectation of being rewarded for his labour in the only coin current in the present improved state of the profession, well observed facts, and sound deductions from them, by one conversant with the physiological laws of the system.

The first subject of which he treats, is that very important one, so interesting to the physician from its occasionally extreme mortality, and the mystery connected with its epidemic prevalence in the best regulated institutions, puerperal fever, or puerperal peritonitis. Our author designates this by a new name, *the peritoneal fevers of lying-in women*, which he thinks a better name, inasmuch as it expresses the fact—"that an affection of the peritoneum is an essential accompaniment of the disease, without defining what that affection is, because it is not uniform."

This term, which is so expressive in many respects, strikes at first unpleasantly upon the ear of the semeiologist, but is the most appropriate one yet applied, when we consider it as an elliptical phrase, implying inflammation of the peritoneum, exciting the action of the heart and arteries, and producing fever. At all events, it stands upon equally fair ground with the epithets of gastric and mucous fevers, sanctioned by the distinguished French physiologist, Professor BOISSEAU. The author, before proceeding to trace the history of this disease, from the works of all those who have written upon it for the last half century, furnishes a detailed account of it; he adds in a note, that Dr. LOWRNER, from a rigid examination of the best authors, and



from comparing their pathognomonic symptoms with his own experience, found that they were very few, which could be admitted in an accurate definition of the disease, "fever, intense pain of the head, and intense pain of the abdomen."

In this character of chronicler, he gives a summary view of the opinions and practice of the different English practitioners down to the year 1793. Supposing that each of these observers had been accurate in his observations, and honest in his reports, the author, from the investigation of the conflicting accounts of these writers, comes to the conclusion,—

"That puerperal fever, by which I always mean that fever which is accompanied by an inflammatory state of the peritoneum, is not one uniform disease, but may occur under different forms. That sometimes it is so mild, as to be curable by the gentlest aperients, and at other times it is very obstinate and fatal. That in this latter form, it sometimes consists of acute inflammation of the peritoneum, with inflammatory fever, which bears, and is curable only by early and active depletion, sometimes of inflammation and fever of a low type, in which depletion is useless and even injurious."

Among all these practitioners, this disease, in its severe form, was found to be peculiarly intractable and mortal. About this time, however, a new practice was pursued by some zealous and able physicians on the continent of Europe, which was stated to be almost infallibly successful. This consisted chiefly in the administration of emetic articles, especially Kermes' mineral, and the success depended upon their being given at the moment of attack. The practice of M. DOULCET, which particularly attracted the attention of the Royal Academy of Paris, on account of its success, was as follows:—Fifteen grains of ipecacuanha, were divided into two doses, one of which was given at the *moment of attack*, and the other an hour and a half afterwards. It produced vomiting and purging. The latter effect was subsequently maintained by a potion, made with two ounces of oil of almonds, one ounce of syrup of marsh mallows, and two grains of Kermes' mineral. This medicine was given daily, until the symptoms of the disease subsided. But in what doses we are not told. M. Doucet, "from losing every patient, now lost none. During four months, four hundred were cured; five or six refused to take the medicine, and all these died." Dr. BAER, of Vienna, likewise pursued an antimonial practice, with the most satisfactory success, as appears from a long and very interesting extract taken from that author.

The practice of M. Doucet was tried in England; but not as Dr. Gooch seems to insinuate, exactly in the manner of its originator. Dr. WALSH said it was infallibly successful; Dr. DENMAN that it was

eminently useful; Dr. Lowden that it disappointed him; Dr. John Clarke that it was injurious; and it soon fell into disuse. •

The author now turns from an inquiry into the practice of physicians of the last age, to scrutinize that of some of his contemporaries. The eminently successful practice of Dr. Armstrong and Mr. Hey, which each was finally obliged to adopt, on account of the great mortality which followed the usual modes of practice, is universally known to the profession to have consisted in *copious bleeding, immediately succeeded by copious purging*, employed before the period of collapse, which usually succeeded in from twenty to seventy hours from the commencement of the attack. Though there were no dissection made of any of the cases attended by these writers, Dr. G. concedes from the symptoms and course of the disease, that these were true cases of peritoneal fevers. He is also of the belief, that the practice they pursued, is the proper one in puerperal epidemics of the character they have described. But he is far from believing, with a great number of physicians, that theirs was the only genuine and immutable form of the disease; and that their practice is the only appropriate one in all cases of the disease. He dissents from the grounds which Dr. Armstrong assumes, that symptoms and dissections were to decide, whether the low epidemic fevers of child-bed were or were not produced by inflammations of the peritoneum: the effects of remedies, he says, forms not only an essential, but the most important part of the history of the disease. “Symptoms and dissections can never do more than suggest probabilities about the nature of a disease, and the effects of a remedy on it. A trial of the remedies themselves is the only conclusive proof.”

This doctrine, which we believe rather antiquated and erroneous, is, no doubt, the result of the bias, which even acute and penetrating minds feel, from the peculiar character of their early studies, which they are never after, whether right or wrong, wholly able to forget.

This tentative mode of forming a diagnosis by the administration of remedies, is now no longer taught, however much it may be practised. A correct knowledge of the action of the organs in health, of etiology and pathology, furnish, it is believed, the only legitimate aid, to indicate the nature of disease, and what process of therapeutics it is necessary to employ in its treatment.

The next question to be treated of, the author observes, is whether the opinion so generally entertained, be correct, that puerperal fever consists always of an acute peritonitis, to be remedied by rigorous and repeated depletion, at the very onset of the disease, in the manner

of Armstrong and Hey. This, consistent with his professions in his preface, he proposes to solve by his own experience.

Shortly after his appointment to the Middlesex lying-in hospital, the seasons became unhealthy, and puerperal fever prevailed epidemically, both in and out of the institution. It wore the aspect of acute peritonitis in all cases, and dissection of the fatal cases always exhibited this lesion, with copious effusions of turbid serum, lymph or pus. In some cases there were inflammation and even purulent secretion in the substance of the uterus. The disease was characterized by a very sudden commencement generally.

"After being quite well, feeling no sense of illness, or at least making no complaint, the patient was seized at once with chilliness or shivering, and pain in the belly, and the pulse rose to 120 or 130. But sometimes the attack was more gradual. For many hours, or even for a day or two, there were pain and tenderness in one part of the abdomen, then in another, with long intervals in which there was no pain any where; and during all this time the pulse would remain quiet or not quicker than 80 or 90. In short, the disease would have an incipient stage, but this was not a common occurrence."

There was invariably a great degree of tenderness in the abdomen, and generally, though not always, a marked distention. In some of the worst and fatal cases, there was no gaseous effusion within the intestines, upon which the tympanitic state depends. The absence of this characteristic symptom of the complaint, obscured at first the nature of the evil. Dissections, however, confirmed fully, the suspected highly-inflamed condition of the peritoneum.

Among the *out* patients Dr. G. was frequently not called to the case, until after the two or three first days of the disease had elapsed. In such cases he seldom or never saved them. The sunken countenance; small, weak pulse of 140 or 160; the tympanitic belly, and short breathing, indicated a fatal disease, past the reach of depletion. Cordials were so unsuccessful, that he says,—“though they appeared to promise the only chance of recovery, wine mixed with gruel, or egg for diet, and diffusible stimulants for medicines, were almost signals for fatal termination.” The first day of the existence of the disease he found to be almost the only probably remediable period. The first and most important object in this disease appeared to be that of seeing the patient immediately after the commencement of the attack; to the neglect of this, and to the delay in the employment of effective measures, half the mortality in this dreaded disease is owing. Suffice it to say, that in his treatment, Dr. Gooche adapted a much similar practice to that so ably promulgated about the same period by Dr. Armstrong. Venesection *instante*, *ad deliquium*,



followed by a large dose of calomel, and that again by doses of neutral salts. If the pulse subsequently raised within a few hours, the bleeding and cathartics were repeated again until it was fully subdued. If soreness or tension of the abdomen still remained, leeches were applied, *to empty the gorged capillary vessels of the part*, and after these a bag large and long enough to cover the whole abdomen, was stuffed with hot poultice, and laid over so as to keep up heat and moisture upon the surface. All these measures, and others such as the necessities of the case required, were repeated from time to time, and the manner of their administration is rendered more useful and intelligible by a number of very interesting cases, which the author has adduced. When he saw the disease early, this practice was commonly successful. It was so very decided, as he observes, "that if it had not been very right, it must have been very wrong."

So far the experience of Dr. G. seemed to confirm the sanguine hopes, entertained a few years ago by the profession, that all the peritoneal fevers of lying-in women are of an acute inflammatory type, to be cured only by early bleeding and purging. So far the problem as to the nature and treatment of the disease had been successfully solved. But this mathematical and definitive mode of coming to rigid conclusions is but illy-suited to the study of the human system either in health or disease, where so many organs inhabit like so many different individuals, one tenement, each of which has respective functions to perform, and are susceptible of being influenced at different times in very different manners. The physician who closely scrutinizes the different organic functions of his patients, when the equilibrium is destroyed by disease, must notice their fluctuating state of action, varying almost at every repetition of his visit, in their degree of action, like the scales of a balance. The fallacy of this mode of reasoning, and the fallability of experience, was a few years subsequently, sufficiently demonstrated to Dr. Gooch. Dr. G. observes—

"The most remarkable circumstance which the experience of the last few years has taught us about peritoneal fevers, is that they may occur in their most malignant and fatal form, and yet leave few or no vestiges in the peritoneum after death. The state of this membrane, indicated by pain, and tenderness of the abdomen, with a rapid pulse, appears to be not one uniform state, but one which varies so much in different cases, that a scale might be formed of its several varieties. This scale would begin with a little more than a nervous affection often removable by soothing remedies, and when terminating fatally, leaving no morbid appearances discoverable after death. •Next above this, a state in which the nervous affection is combined, with some degree of congestion, indicated in the cases which recover, by the relief afforded by leeches,

and in the cases which die, by slight redness in parts of the peritoncum, and a slight effusion of serum, sometimes colourless, sometimes stained with blood."

Above this in the scale, the author places the acute inflammation of the peritoneum. Though this theory seems not entirely satisfactory, the treatment and dissection of the cases which led to this belief well deserve the closest attention of the practitioner, and for which alone it would be worth his while to purchase this book. The griping action of a cathartic, severe after-pains, seemed sometimes the cause of the affection; at other times, no apparent cause could be assigned.

According to the plan of Dr. G. many cases are detailed to illustrate the varieties which occurred in his practice. This form of peritoneal fever presented the ordinary symptoms of the acute form—pain and tenderness of the abdomen, with a rapid pulse, which had not however the hard and wiry character of the latter. It was much shorter in its duration. The peritoneum after death was pale and healthy, and the chief morbid appearance was a little turbid serum effused into the abdomen. It occurred usually in persons of nervous and relaxed temperaments. From its semblance to the acute stage, many practitioners were betrayed into the impropriety of copious venesection, which never seemed to benefit the patient, but in most instances was decidedly injurious. Opiates, Dover's powders, gentle aperients, fomentations over the abdomen, and when the latter did not allay the soreness, leeches followed again by fomentations to the abdomen. In doubtful cases, when the accumulated experience of Dr. G. was unable to decide, from the weak or hysterical temperament of the patient, and the soft though rapid pulse, leeches were applied to the abdomen at first, consonant with the exhibition of the opiates. When blood was drawn from the arm, it never in these cases presented the inflammatory crust, thus affording another important aid, in the establishment of the diagnosis. This assuaging treatment was almost universally successful.

Of the several fatal cases which the author adduces, when the common active treatment for puerperal peritonitis was adopted, and which seemed too to be indicated by the symptoms, and which he believes might have been saved by the opiate treatment, we will quote the following:—

"A practitioner sent for me to see a patient, of whom he gave the following account:—She was habitually delicate and subject to hysteria. After an easy labour of her eighth child, her after-pains had been long and severe, but her pulse was not quick. At six in the evening of the second day it was soft and

under 80. At five o'clock next morning, the practitioner was called from his bed, and found her complaining of great pain and tenderness over the whole abdomen. She had been vomiting; her pulse was quick, but small and weak, and her skin temperate. He immediately bled her, letting the blood flow till she fainted. He next gave her five grains of calomel, and soon afterwards a dose of salts and senna, which she vomited. Two hours after the first bleeding, the pain not having been relieved, he bled her again to fainting. Twelve leeches were applied over the abdomen, and a pill was given her, containing three grains of opium. Having received this account, I went into the chamber of the patient. Her face was ghastly; it was difficult to keep her out of a fainting fit: her skin was cold and clammy; and her pulse so quick, small and fluttering, that it could not be counted. I took off the leeches, and endeavoured to revive her by warmth and cordials, but she died in the evening, about six hours after my visit, and about thirty from the beginning of pain. The body was opened next day. The peritoneum was healthy but pale; there were between one and two ounces of colourless serum in it's cavity; the abdominal viscera were all healthy but pale; the uterus was contracted in the ordinary degree."

. If opiates and fomentations, instead of bleeding, had formed the treatment, the author believes the patient might have been saved.

It is from the fact that affections, different in their nature, and in the treatment which they require, have been located under the name of puerperal peritonitis, and the difference of the same in the early and late stages of the acute form, that we have such different modes of practice advised; the camphor and opium, bark and stimuli of some, and the depletion carried to its utmost extent of others. We are aware that we have dwelt longer upon this first subject of the author, than our limits and the importance of the following chapters would seem to justify, but we are convinced from some cases we have witnessed, that the experience of Dr. Gooch, in regard to the injurious effects of blood-letting and severe diet, in some cases of *apparent* puerperal peritonitis in females of nervous temperaments, deserves the attention of the profession. Dr. G. in consonance with his professions in his preface, treats more particularly of those forms of diseases which he believes has least attracted the attention of physicians. His next subject, is the *disorders of the mind in lying-in women*, and though he admits that they sometimes depend upon an inflammatory or congested condition of the brain, which he believes may be readily perceived, by the flushed face, hot skin, and high and febrile pulse, and which require active depletory measures for their cure; he is particularly occupied in the work before us, with those cases, where it depends upon an opposite condition of the system, and requires an opposite treatment, and indeed can only be cured by an anodyne and sustaining course. He says, indeed, "if I judge from my own experience, furious delirium from inflammation of the brain



is a rare occurrence in child-bed." Puerperal mania and melancholy he believes to be much oftener a disease of nervous excitement and debility. He has never known them consequent upon a suppression of milk, or from weaning of the child, though he would not deny the experience of others, who have asserted such to be the case, but in his practice the nervousness and debility had always compelled the female to abandon the attempt to suckle her offspring some time before the mental derangement was manifested. The digestive organs are generally disordered in these cases; in some cases so slightly as to be scarcely perceptible, but in others, marked by a thickly-furred tongue, offensive breath, and dark and offensive stools. In the latter instances, we would be induced from the beneficial effects of purges to think, that the disorder of the alimentary canal was the primitive cause of the mental alienation. Fortunately for females, puerperal mania is not a very usual complaint; Dr. W. HUNTER states, that during the whole period of his practice, he had witnessed but about twenty patients, and therefore the ten or twelve cases which Dr. G. has inserted in his work, may be considered as a fair representation of the disease, and not as a picked assortment to suit his peculiar views. These cases, and the author's remarks upon them, are of great practical importance, and a thoughtful and attentive perusal of them would well reward the practitioner. It was at one time thought, that the mental disorder of puerperal females never became fatal, and even Dr. BAILLIE remarked, that the question was not whether such patients *would* recover but *when*. But it has been Dr. G's lot to witness several such fatal cases, and he is induced to feel strengthened in his position, by a quotation from the manuscript lectures of Dr. Hunter, to this purport—that there are two forms of puerperal mania, one attended by fever, or at least by a rapid pulse, and which is generally fatal; and one attended with a very moderate disturbance of the circulation, in which the patients generally recover. Some which Dr. G. attended with a quick pulse recovered, but none of these were treated for paraphrenitis, but with anodyne aperients and mild nourishing articles of food. Dr. G. has met with some cases, of which he cites an example, the symptoms of which bore great analogy to delirium tremens, and were happily treated upon the same plan of practice consecrated to that complaint. Of the frequency of the occurrence of puerperal disorder of mind, it is difficult to determine, as the violent and unyielding cases are only consigned to the hospitals, from whence such estimates are usually derived. Its curability or the number of cases in which recovery takes place, from the same obvious reason cannot be readily determined.

From the statement of M. ESQUINOL, it appears that out of ninety-two cases fifty-five recovered and six died—of those which recovered thirty-eight did so in less than six months. Of eighty-five admitted into Bedlam, says Dr. HASLAM, only fifty recovered, leaving thirty-five as the number of the incurable.

“I am persuaded,” says Dr. G. “that such tables throw little light upon the question, and present a prospect unnecessarily gloomy and discouraging. Of the many patients about whom I have been consulted, I know only two who are still after many years disordered in their mind, and of these one had already been so before marriage.”

According to the author's experience, the mania which occurs shortly after labour, is more easily remedied than the melancholy, which often ensues to the debility produced in nervous patients by suckling. For a good dissertation on the causes of this affection, and remarks upon its physical and moral treatment rife with the signs of wisdom and experience, we must refer the readers of this journal to the book itself.

This subject is followed by an interesting dissertation, entitled, “thoughts on insanity as an object of moral science.”

“The mode of distinguishing pregnancy from the diseases which resemble it,” forms the subject of his third chapter, and which from the importance of the subject, and the novelties of the author's manner, we will briefly notice. With all the systematic studies which the most zealous student practices, he will find in relation to this subject, much to be supplied by his own ingenuity and a constant need of the exercise of his good sense, to avoid the errors which among nurses, though themselves very subject to deception, is thought unpardonable. The familiar illustrations of a man of shrewd experience, as Dr. G. appears to have been, who adds additional gleanings to the harvest already garnered, is well deserving the study of the practitioner of obstetrics.

Having stated the ordinary symptoms of pregnancy, of which with all other writers he is disposed to place most reliance, on the areola which surrounds the nipple, except that positive one of the movements of the child, he states that the whole, with the exception of the latter, may be produced by other causes than pregnancy, and hence from reasoning, should not be in dubious cases confided in without the greatest caution.

“But,” he says, “if the ordinary symptoms of pregnancy are so far from being infallible. What, it will be asked, is the result in practice? It is this; that although they are sufficient guides in most cases and under ordinary circumstances, yet they are often insufficient. One person is pregnant, who has no

right to be so, and obstinately denies it; another is pregnant who has no cause to be ashamed of it, but from some circumstance, reasonable or unreasonable, disbelieves that she is so. One thinks that she is pregnant merely because she is sick, another because she is not regular, a third because her belly swells, and a fourth because she wishes to be so; and these erroneous denials, and erroneous suspicions, are imparted from the patient to the medical attendant, and influence his conduct. Of these errors some are the result of ignorance or thoughtlessness, but some are committed by men of sense, experience, and attention."

To ascertain with certainty the state of things in these cases of doubt, two measures are proposed:—1st, to determine whether the enlargement of the abdomen depends upon an increase of the uterus; and if so, in the second place, whether that of the uterus depends upon its containing a fetus. This can only be done by what is called the examination by touch. We have long been under the impression that the facility of determining this difficulty, by touching, was very much overrated during the early months of pregnancy, and we are confirmed in this belief by the admission of Dr. W. Hunter, who possessed both great experience and tact. He used to express himself thus, in his lectures in relation to this subject; "I find that I cannot determine at four months, I am afraid of myself at five months; but when six or seven months are over I urge an examination."

Dr. G. however believes that by the plan he practices it may be more readily accomplished. Having detailed the method of touch exercised upon the abdomen, he proceeds to lay down the course to be practised in the vagina. Four wood-cuts are given to illustrate to the eye the states of the neck of the uterus to be determined by the finger. There are three things to be observed:—

"The neck of the uterus, the state of its body, and the movement or rather the mobility of the fetus. 1st. In the unimpregnated state, the neck of the uterus projects into the vagina about two-thirds of an inch, like a thick, firm, fleshy nipple. At the termination of pregnancy, a few days before labour, this neck is completely obliterated, the portion of the uterus which lies over the top of the vagina no longer projecting over its cavity, but forming a flat roof."

The obliteration begins about the seventh month, the neck becomes gradually softer, broader and shorter, so that the practitioner, if he have an opportunity of making an examination two or three weeks before parturition, finds only a soft short nipple remaining. But the period of obliteration varies at its commencement in different individuals.

"An anatomical teacher will show the preparation of a uterus in the fifth month of pregnancy, with an unshortened neck, and think the question settled by anatomical demonstration; but a uterus in a bottle is only one case, and



above alluded to, occurred in females about the age of thirty. They are much more common, however, according to Dr. Gooch, about the period of fifty.

The collection of air, water, and hydatids, in the uterus, are other causes described by writers, of spurious pregnancy. Dr. G. has never seen air collected permanently in the uterus, so as to form *tympanitis*. In the cases he has observed, the air was not retained so as to distend the uterus, but was expelled with noise many times a day. It should he thinks be called *flatus* of the uterus. Of *dropsy* of the uterus he has never seen a case.

On polypus of the uterus, the author has a long and instructive chapter, detailing the varieties that occur, the different effects they produce, and his very great success in removing them with the ligature, by means of a straight double canula, of his own modification. This mode of cure, he prefers much to excision, as he has never known it to produce bad results, when a portion of the uterus had not been embraced by the ligature, though he has himself removed huge polypi, with pedicles thicker than the wrist. This accident he thinks may be guarded against, in all cases, by the softness and insensibility of the polypus, and the effects of pressure upon it, which distinguishes it from the inverted uterus. In placing the ligature round the neck of the polypus, he thinks it not necessary to go so high as to incur the danger of including the neck of the uterus, which has been fatal, in many instances, for his experience has assured him, that the portion of the neck which remains after the ligature and tumour comes away, dies and falls off, like the remnant of umbilical cord on the abdomen of a child. He cites an instance, however, where the ligature was applied to the fundus of an inverted uterus, which had resisted all attempts at reduction, and jeopardised the existence of the patient from the profuseness of the hæmorrhage.

“On the fourteenth day,” he says, “both instrument and tumour came away: there was times when I had strong suspicion it was a polypus, but a sight of the tumour proved that it was the fundus of the uterus, for it was a hollow cup, the size of a small apple, in the cavity of which could be seen the Fallopian tubes. Excepting the pain and some vomiting, the patient had no bad symptoms during the progress of the cure, and several months afterwards her husband called on me to say she was quite well.”

Polypus of the uterus Dr. G. believes to be a much more frequent disease than is generally supposed, that in many cases where it exists and produces hæmorrhage, &c. from the uterus, it is never detected, and in other cases only after it has attained a considerable size, and drained the circulation, and injured the health, if not destroyed the

life of the patient. If detected and removed, the patient not only lives, but regains perfect health, and may continue to bear children.

Dr. G. asserts that pregnancy has taken place during the existence of a polypus, which he removed successfully in the fifth month of gestation. In regard to the other kinds of tumours than polypi, which are formed in the vagina, he says—

“Whenever the tumour has a stalk, which can be included in a ligature without any danger of including the neck or fundus of the uterus, I would apply it; it succeeds in an immense proportion of cases. I have known it succeed in several, when from the cauliflower roughness of the tumour, others have been deterred from it, and even if the excrescence should return, the patient is not worse off than she was before. She has had the only chance which art can afford her, and has lost nothing, even if it fails.”

In the genuine cauliflower excrescence, its application would be much less promising, though the author would still advise it, “whenever the form of the excrescence is such that the whole can be removed by a ligature, without including any portion of the uterus.” The author observes, that these malignant excrescences in the vagina, are a far more unusual disease than practitioners generally imagine, and that among the cases in which he is consulted from the country, none are so frequently mentioned as the cauliflower excrescence; yet he says the fact is, “that where we see one case of cauliflower excrescence, we see ten or even twenty of common polypus, and fifty of carcinoma or malignant ulcer of the uterus.”

Some cuts are introduced into the work, to illustrate the different situations of polypi; the kind of instrument the author employs, as well as his mode of using it.

Under the head of “polypus of the uterus, attended by unusual circumstances,” among others, Dr. G. details a case, where a polypus of the neck of the uterus in an unmarried woman, kept up a leucorrhœal discharge during two years, which could only be suppressed by the removal of the polypus, which was of a size of a walnut by the ligature. In this case there was no hæmorrhage, so different from what usually occurs in this affection. Small tumours of the size of a filbert, will sometimes cause very considerable hæmorrhage, and as such are too small for the application of the ligature; he advises them to be pulled away with the finger, or twisted off with a pair of surgeon’s forceps. He cites a case of cylindrical polypus, which, in a woman who had long been subject to hæmorrhages from the uterus, was suddenly protruded from the vagina, projecting near half a foot from the external orifice. It was about half as thick as the wrist, resembled somewhat an intestine, but could be distinctly traced

through the orifice of the uterus. It was removed successfully by the ligature.

The two following chapters on the "irritable uterus," and "a peculiar form of hæmorrhage from the uterus," have already been noticed in this journal, in Volume VIII. to which we would refer our readers.

The last and concluding chapter of this work, is upon a subject, entitled "symptoms in children erroneously attributed to congestion of the brain." The object of the author, as we have before mentioned, has not been to work up a book for the purposes of sale, comprehending within it all the different diseases of the obstetrical art; but to limit his remarks to such places only, where there appeared an hiatus skipped over by previous writers. He believes that in children, weak and delicate by nature, as well as in those who have been greatly reduced by bowel complaints, or defective nutrition, there are often symptoms of cerebral affection, which able practitioners have repeatedly mistaken for congestion of the brain, and which Dr. G. believes, depends upon an opposite cause, a deficiency of blood in the brain, and an irritability in that organ to perform its functions. A collapse from lack of excitement, instead of from inflammation or congestion of that organ. The leeches, cold application and cathartics, suited to the latter affection, would, of course, be directly improper for the former—which would require nourishing food, and strengthening medicines. We conceive that practitioners, who do not believe that diseases occur only in regular grades, and have each a set of symptoms peculiarly their own, which they never loan out to another disorder, and which are only to be treated by a certain set of prescriptions, set down by the fiat of experience, to be registered at home, or carried in the pocket in a note-book, will readily admit the correctness of Dr. Gooch's reasoning. Such physicians who are accustomed to look at every new case of disease as a new subject of study, eternally varying from other cases, according as one or more of the organs is in a more or less excited or asthenic condition, may believe that in debilitated children, the loss of function in the brain may depend upon other causes than congestion, and would not, we think, if very observant, mistake it. Such occurrences are admitted by Dr. Gooch to be far the least common—and in our country, where children have generally healthier parents, are better fed, clothed and live in purer air, such cases no doubt occur, but infinitely more seldom than the irritative affections of the brain. Such cases are analogous to the *apoplexia ab inanitione* of the older writers, in which



the loss of function of the brain is not certainly to be restored by bleeding, but by nutriment and tonics. It is well known, that in great exhaustion from disease, or after profuse losses of blood, vision has been rendered imperfect, noises occur in the ear, with impaired hearing, and the mental functions for a time nearly cease. The insensibility of the brain in these cases, so far as we can discover, depends upon the enfeebled circulation. Coma, stertorous breathing, dilated and motionless pupil, and serous effusion into the brain after death, are mentioned by Dr. G. among the appearances in these cases of astheny, simulative of congestion of the brain. To do him justice, we will cite one of his fatal cases, passing over those where recovery took place under his restorative plan of treatment.

“A little girl about two years old, small of her age, and very delicate, was taken ill with the symptoms which I have above described, (drowsiness, languor, absence of active febrile symptoms.) She lay dosing, languid, with a cool skin, and a pulse rather weak, but not much quicker than natural. She had no disposition to take nourishment. Her sister having died only a week before of an illness which began exactly in the same way and had been treated by leeches and purgatives; and some doubts having been entertained by the medical attendant of the propriety of the treatment, leeches were withheld, but the child not being better at the end of two days, the parents, naturally anxious about their only surviving child, consulted another practitioner. The case was immediately decided to be one of cerebral congestion, and three leeches were ordered to be applied to the head. As the nurse was going to apply them, and during the absence of the medical attendants, a friend called in who had been educated for physic but had never practised, and who had great influence with the family. He saw the child, said that the doctors were not sufficiently active, and advised the number of leeches to be doubled. Six therefore were applied; but when the medical attendants assembled in the evening, they found the aspect of the case totally altered, and that for the worse; the child was deadly pale, it had scarcely any pulse, its skin was cold, the pupils were dilated and motionless when light was allowed to fall upon them, and when a watch was held to its eyes it seemed not to see; there was no squinting. The next day she vomited her food several times; it was therefore directed that she should take no other nutriment than a dessert-spoonful of asses milk every hour, and this was strictly obeyed and continued for several days. The child wasted, her features grew sharp, every now and then she looked fretful, and uttered a faint squeaking cry; the eyeballs became sunk in the socket, like those of a corpse that had been dead a month; the skin continued cool, and the pulse weak, tremulous, and sometimes scarcely to be felt. Under this regimen, and in this way, she continued to go on for several days. At times she revived a little, so as to induce those who prescribed this treatment to believe confidently that she would recover, and she clearly regained her sight, for if a watch was held up to her, she would follow it with her eyes. She lived longer than I expected, a full week, and then died with symptoms of exhaustion, not those of

oppressed brain. The head was opened by a surgeon accustomed to anatomical examinations, and nothing was found but a little more serum than usual in the ventricles."

From some cases, with similar symptoms related by the author, where recovery almost immediately followed the exhibition of a few drops of sp. of ammonia, in a decoction of bark, with good diet, and also, from the tenor of his remarks, we are induced to believe, that had a similar plan been adopted in the foregoing case, the issue would have been more happy. Our author, however, anxiously deprecates the opinion, which some might be induced to form, that he does not believe that heaviness of the head and drowsiness in children commonly depend on congestion, and are to be relieved by depletion, and that acute hydrocephalus is a serous effusion, the result of inflammation, and capable of being cured only in the inflammatory stage by bleeding and purging.

"These vital truths," he says, "I would state as strongly as any man, but there are opposite truths. All that I mean is, that these symptoms sometimes depend, not on congestion, which is to be relieved by bleeding, but on deficient nervous power, which is to be relieved by sustaining remedies. All I advise is, that not only the heaviness of head and drowsiness should be noticed, but the accompanying symptoms also, and that a drowsy child, who is languid, feeble, cool, or even cold, with a quick, weak pulse, should not be treated by bleeding, starving and purging, like a drowsy child who is strong, plethoric, has a flushed face, perhaps swelled gums, and a heated skin."

We shall here close what we have to say in regard to this author, after having been betrayed into many more remarks than we originally intended, by what we conceive to be the practical usefulness of the author's observations. Though many of his subjects are to be considered as exceptions to the kind of affections that more generally occur in practice, they are for that reason the more valuable, and more deserving the attention of practitioners. As they have been discovered only by experience, sad so far as related to the sufferers themselves, let the medical world read and think, so as to avoid a duplicate array of victims, to establish a series of facts, which have been already proven. We would recommend this book to physicians, believing that many would find it useful to themselves and to their patients, as well as interesting in the perusal from the lively manner in which it is written.

J. P.

## BIBLIOGRAPHICAL NOTICES.

XII. *A Critical and Experimental Essay on the Circulation of the Blood, especially as observed in the minute and capillary vessels of the Batrachia and of Fishes.* By MARSHALL HALL, M. D., F. R. S. E., M. R. I., M. Z. S., &c. &c. London. 8vo. 1832.

Dr. Marshall Hall, the author of the work of which we propose to offer a brief analysis in the present article, must be allowed to be a zealous and laborious investigator, and an indefatigable writer. Although scarcely past the meridian of life, he has contributed more amply to the medical literature of his country than almost any of his contemporaries; and while it is freely confessed that we cannot discover in his various productions, the indication of a transcendent genius, no one will refuse to concede that they afford evidences of sound judgment, industrious research, and not a few original and useful views, which entitle the author to our respect, and justify the satisfaction which the reading portion of the medical profession in England, and we may add in this country, experience on the appearance of a new work from his prolific pen.

The subject treated of in the present essay is one of great interest to physiologists, for there are few topics on which more has been written, which are viewed in a more diversified manner, and on which, consequently, positive decisions are more desirable than the circulation of the blood in the capillaries, the powers which circulate the blood, and the influence of the brain and spinal marrow upon the circulatory function. On all these points the remarks and experiments of Dr. Hall, as detailed in the present work, are calculated, we think, to throw some light, and to enable us to arrive at more satisfactory conclusions than we have heretofore been able to do.

In a short introductory chapter, Dr. Hall indulges in some sensible remarks on the principles of investigation in physiology. According to him, the sources of our knowledge in that department of medical science, or, indeed, in all natural science, are observation and experiment. The former consists in a sustained and watchful attention to events which pass under our eye in the ordinary course of nature; the latter, in devices for placing natural objects in new and unusual circumstances or situations. The following principles are laid down by him for the prosecution of physiological investigations. *1st.* Never to have recourse to experiments, in cases in which observation can afford us the information required. *2d.* Never to perform an experiment without the persuasion, after the most mature consideration, that the object desired will be attained by that experiment, in the form of a real and uncomplicated result. *3d.* Never to repeat experiments which have been performed by physiologists of reputation, unless there be some doubt respecting their accuracy, or the accuracy of the deductions drawn from them. To these he adds, *4th*, that when a given experiment has been concluded to be essential and adequate to the discovery of a truth, it should be instituted with the least possible infliction of suffering; and



5th, that every physiological experiment should be performed under such circumstances as will secure a due observation and attestation of its results, and so obviate, as much as possible, the necessity for its repetition.

"The whole science of medicine and surgery is dependent on physiology. To exclude physiological investigation, would be to erect an utter barrier to the progress of our art, viewed in any other light than as mere empiricism. They alone can repair a machine who understand its construction and its movements.

"In thus stating the argument in regard to what is right and just in physiological investigation, I have steered a course equally distinct from the heartless cruelties practiced by some soi-disant physiologists, and the senseless declamations of others against what they are pleased to call vivisections. The whole argument may be concentrated to a point:—are Harvey, Haller, and Hale, worthy of our applause for their researches into the circulation and the action of the heart? Let us remember that they performed experiments. It is not, therefore to experiments that we can object, but to such experiments as are unnecessary or useless, or performed without regard to the pain or sufferings inflicted. We may at the same time admire the conduct of one experimentalist and condemn that of another."

The first chapter of the work is occupied with an inquiry into the anatomy of the minute and capillary vessels. Dr. H. sets off with the remark, that all the descriptions of these vessels and of the circulation in them, contain so many inaccurate statements, that they appear to have been written from the imagination rather than from actual observation. He cites as examples of such inaccuracies what is alleged of the frequent anastomoses and conjunctions of the minute arteries, and of the immediate termination of these arteries in veins, as they are observed in the web of the frog;—anatomical dispositions, which if they occur at all, do so so very rarely, that after the most diligent search, he could never be able to detect them in a single instance. Influenced by the conviction that the real course and distribution of the vessels in question and the real phenomena of the minute, arterial, capillary, and venous circulation are very peculiar and highly interesting, Dr. H. has devoted much time to a patient investigation of these subjects, and has presented in the chapter before us the results of his observations. His experiments appear to have been conducted with great care, and with a due regard to all the circumstances that could insure perfect accuracy. He employed the achromatic microscope of Mr. Dollond, and devised peculiar modes of placing the moving scenes he had to examine under the field of its object-glass. Dr. Hall very properly remarks, that in describing the minute and capillary vessels and circulation, we should attach distinct ideas to the various terms employed, and especially distinguish the capillary vessels from the minute arteries from which they arise, and from the minute veins to which they give origin; because a neglect of these circumstances has given rise to the confusion which pervades the descriptions extant on that subject. His views relative to the arrangement of those vessels will be gathered from the following extract:—

"The minute vessels may be considered as arterial, as long as they continue to divide and subdivide into smaller and smaller branches. The minute veins are those vessels which gradually enlarge from the successive addition of smaller roots. The true capillary vessels are obviously distinct from each of these. They do not become smaller by subdivision, nor larger by conjunction, but they are characterized by continual and successive union and division, or

anastomoses, whilst they retain a nearly uniform diameter." "These distinctions are highly important. Without them, the phenomena cannot be clearly described or understood. It is quite erroneous to speak of capillary arteries or capillary veins, or of the true capillary vessels as a venous net-work,—as vessels containing a serous blood without globules, or as rather to be inferred than accurately seen. The last branches of the arterial system and the first root of the venous, may be denominated minute; but the term capillary must be reserved and appropriated to designate vessels of a distinct character and order, and of an intermediate station, carrying red globules, and perfectly visible by means of the microscope. Meckel is obviously in error, in omitting to mention the capillaries altogether; and Adelon, in speaking of the capillary system in the plural number, including under that designation the nutrient, secretory, and exhalant vessels."

We may here mention, that Dr. Hall's mode of proceeding, which enabled him to place under the microscope the lung and mesentery of animals, in order to ascertain whether there be any difference between the systemic and pulmonary minute and capillary vessels and circulation, and insured a continuance of the circulation, unimpeded and undisturbed, for a sufficient time, is founded on an observation originally made by Mr. Edwards, and mentioned in that distinguished physiologist's work on the influence of physical agents, viz. that batrachian reptiles, placed in water of  $42^{\circ}$  of the centigrade thermometer, or  $108^{\circ}$  of Fahrenheit die almost immediately. On repeating these experiments, with the view to ascertain the cause of so sudden an annihilation of life in these animals, Dr. H. found, that although sensation and motion had entirely ceased, and the animal had become rigid and apparently dead, the action of the heart still continued. Having placed the lung of the animal under the object-glass of the microscope, he was gratified to find the circulation, arterial, capillary, and venous, quite perfect, and "had thus an opportunity of contemplating at leisure, in one instance during four successive hours, under circumstances free from the infliction of pain or suffering, this most splendid and interesting scene." Dr. Hall subsequently found that water of the temperature of  $120^{\circ}$  Fahr. answers far better than water at  $108^{\circ}$ .

With a view to determine the point to which we have alluded above, whether there be any difference between the capillary vessels of the systemic circulation and those of the pulmonic, Dr. Hall examined, in the way mentioned, the fin and tail of the stickleback, the web of the frog's foot, the mesentery of the toad, and the lungs of the salamander, frog and toad. The account he gives of the physical characters and arrangement of the minute and capillary vessels of both the systemic and pulmonic circulations is the most distinct and intelligible we are acquainted with, and has led Dr. H. to the conclusions respecting the character of these vessels, which we have already stated in his own words. We are aware, that his account applies solely to the capillary system of the saurian and batrachoid reptiles; but it is reasonable to believe, the same arrangement, if it really occurs in them, will be found to prevail in the higher orders of animals. But however interesting the details on the subject may be, we are compelled to omit them in this place and to refer such of our readers as may be curious on matters of that kind, to the volume itself. We can make room only for the following extract.

"If we institute a general comparison between the systemic and pulmonary



circulation, we shall arrive at the following conclusions. The arteries in the former divide and subdivide at considerable intervals, until they become extremely minute; and from the rapidity of the circulation, are only distinctly seen by the aid of the higher powers of the microscope; in the latter, the subdivisions of the minute arteries take place at the nearest points along its course, the arteries terminate abruptly, the branches assume at once the capillary characters. The veins are formed in a manner perfectly similar to that of the division of the arteries, in the systemic and pulmonary circulation respectively; the capillary vessels of the systemic circulation are far less numerous and more tortuous than those of the lung. It may be said, that in the web, the vessels are adapted to support the nutrition and life of its various textures; in the lung, that the membrane is a mere scaffolding to spread the vessels which convey the blood in the fullest manner over its extensive surface."

This description applies more particularly to the difference in the arrangement of the vessels in the systemic and pulmonic circulatory apparatuses of the salamander, but will do so with trifling modification, to the differences in the other reptiles examined by Dr. Hall.

The next subject which Dr. H. investigates, consists of the powers which circulate the blood. The question of the entire circulation, he remarks, is a problem made up of so many elements, that it is not extraordinary it should have been so difficult to fix and limit the value and influence of each; and that as usual in the absence of proofs, the subject should have been rendered more obscure by being veiled in a variety of conjectures. According to him the circle performed by the blood may be not inaptly divided into four arcs. Of these the heart must be viewed as the principal and first; the arteries as the second; the capillary vessels as the third; and the veins as the fourth. "To view each arc distinctly, as well as the whole circle connectedly, will greatly assist us in forming accurate views of the nature of the circulation."

In order to present to his readers a sketch of the opinions of the principal physiologists who have chiefly occupied themselves in the investigation of the powers which move the blood, and thus indicate the state of our knowledge on that subject, at the time he commenced his own researches, Dr. Hall favours us with long extracts from the works of Galen, Harvey, Haller, Spallanzani, Tourdes, Bichat, John Hunter, Huxham, &c. After doing this he passes to the detail of his own observations.

"*Of the extent of the influence of the heart in the circulation.*"—Dr. H. remarks that if the circulation in the web of the frog be carefully examined under the most favourable circumstances, it will be found to be very rapid in the arteries, much less so in the capillary vessels and in the veins, and equable in all. He has almost invariably been able to detect, with a good microscope, a degree of pulsatory acceleration of the blood in the arteries at each contraction of the heart, and is disposed to conclude, from his own observations, that the natural circulation was rapid and entirely pulsatory in the minute arteries, and slow but equable in the capillary and venous systems. The pulsatory movement, at each systole of the heart, becomes very manifest whenever the circulation is in the slightest degree impeded. Under such circumstances it is seen in all the three systems of vessels, arterial, capillary and venous. "In the arteries there is generally an alternate more or less rapid flow of the globules, at each systole and diastole of the heart; in the capillaries and veins, the blood is often completely arrested during the diastole, and again propelled by a pulsatory movement,



during the systole of that organ." Dr. Hall thinks that these phenomena are conclusive proofs that the power and influence of the heart extend through the arteries to the capillaries, and through these to the veins, even in the extreme parts of the body.

*Evidence of the muscular action of the arteries.*—In support of the existence of an important influence of the arteries, Dr. Hall adduces the fact of a perfect circulation in acardiac foetuses and acardiac animals. Nevertheless he admits, that it may be contended, that much in the circulation, in such cases is effected in the capillaries. He further adduces, in support of this important influence in the arteries, the circulatory apparatus in fishes and the crustacea; the former of which have a simple pulmonic heart only, the latter a single aortic heart. To these arguments derived from cases of monstrosity and from comparative anatomy, Dr. H. has added that from experiment. He repeated thrice an experiment originally performed by Haller and Spallanzani, and which consists in excising the heart and marking the results.

"A ligature was applied round the aorta of a frog. The circulation in the web, which was previously very vigorous, was almost immediately arrested, first in the capillaries, then in the veins. In the arteries there was a singular oscillatory movement of the blood for ten or fifteen minutes. The globules of blood proceeded slowly onward for some seconds; there was then, all at once, a rapid retrograde movement of the blood apparently through the same space. The oscillation was repeated; the globules of blood were again moved alternately in progressive and retrograde directions as before. It appeared to me, that the artery gradually contracted, in successive portions, and slowly emptied itself by propelling the blood in a continued stream along its final branches; that it then dilated suddenly, and drew the globules of blood in a rapid retrograde course.

"During the first contraction of the artery, the blood would be propelled along the capillaries and veins. During the succeeding contractions and relaxations of the artery, the globules would merely oscillate, being driven forwards and drawn backwards alternately. From these observations, it would appear almost certain, that the arteries possess a muscular contractile power."

But these are not the only circumstances adduced by Dr. Hall in favour of the contractile power of the arteries. He further points out, as corroborating his opinion; 1st. The anatomical arrangement of these vessels, referring to Mr. Hunter for the details on the subject, and for the arguments flowing from it. 2d. The augmented impulse in particular arteries,—a phenomenon particularly noticed by Laennec. 3d. The effect of elevated temperatures upon these organic tubes. On the latter subject our author remarks, that he had not only observed that the batrachia, on being exposed to water of 120° of Fahrenheit, died almost instantly; but that the superficial muscles became rigidly contracted. He exposed the heart to the influence of water raised to this temperature, and noticed that this organ immediately became small, pale, and rigid. This circumstance led him to presume, that the experiment might confirm or correct our views respecting the muscularity of the arteries and of other textures of the body. Having tried the experiment, he found that a mere fibre of a longitudinal muscle was shortened and made rigid, while a portion of membrane or nerve underwent no change. He next took an artery and vein which lay nearly flaccid upon a portion of glass, and placed them in the water. The artery immediately became rigid and cylindrical, while the vein suffered no apparent change. Dr.

Hall thinks that the results of these experiments furnish an important confirmation of the opinion, that the arteries possess a muscular and consequently a contractile tissue. Yet he frankly admits that none of the above arguments are absolutely decisive. The function of the arteries, he says, are mingled in the cases of the acardiac fetuses and acardiac animals, in the fish tribe and in the crustacea, with that of the capillaries; and unless we are enabled to separate these two orders of vessels, it is impossible that we should ascertain the function appropriate to each. The argument derived from the structure and the augmented action of the arteries, and the influence of an elevated temperature, he regards as more distinct. "The apparent effect of alternate contraction and relaxation of the artery after the ligature of the aorta, is certainly most powerful; indeed it scarcely admits of a remaining doubt of the structure and function of the arteries."

Nevertheless, Dr. H. thinks it is important that this possible doubt should be removed,—an object which he regards as satisfactorily effected by the interesting fact, discovered by him, of an artery in the frog and toad, which pulsates distinctly for a considerable time after the removal of the heart.

"The artery to which I allude, is a branch from each of the arteries which in the frog and toad, after separating at a short distance from the heart, rejoin and form the aorta. Pursuing its course backwards and downwards, it passes under the transverse process of the third vertebra. It is here bound down. It is also very tortuous. When the viscera are removed, two pulsating points are distinctly seen at this part. On a minute examination, these pulsating points are found to be portions of cellular and muscular textures, above and below the transverse process just mentioned, moved by the contraction of a subjacent artery. On removing these textures carefully, and on removing the skin from the back of the animal, the part along which the artery passes on emerging from beneath the transverse process, is sufficiently thin and transparent to admit of its being placed under the microscope. The artery is then plainly seen to pulsate, becoming straighter and paler at each contraction. The adjacent textures are moved at the same time, and the blood is frequently seen to oscillate in a branch of the same artery situated very near it." "In this fact we have the most, and, I may add, the only indubitable proof of a contractile action in an artery."

*Want of proof of irritability in the true capillaries.*—Dr. Hall remarks, that the flow of blood through the capillaries appears in every instance to be effected and modified by powers impressed upon it, and of a character extraneous to any action of these vessels themselves. The following circumstances are offered in support of this opinion. 1st. The influence of the contraction of the heart is quite obvious upon the motion of the blood in the capillaries. 2d. The struggles of the animal have an influence in retarding or arresting the flow of blood in these vessels, or rendering it retrograde. 3d. Any cause of contraction in the membranes forming the web itself, has a remarkable influence upon the course of the blood in the veins and capillaries. 4th. If the limb be bound with a tight ligature, the blood is rendered retrograde in its movement along the minute veins and the capillaries, by slight degrees of pressure made upon that part of the limb which intervenes between the ligature and the web. The blood is thus simply pressed out of the large vein of the limb in a retrograde course along its roots and the capillary vessels. 5th. We frequently remark anastomosing branches between the veins of the web of the frog. The globules of



blood in them vary in their course at every moment, and in every possible manner. Similar phenomena are noticed in the capillaries themselves; and especially in those occupying spaces between two adjacent veins. Every kind of movement in the globules of blood may be observed in these vessels, the obvious and distinct result of forces impressed upon them, or of issues afforded them. 6th. When the course of the blood along a large vein is arrested, this vessel immediately assumes the character of an artery, apparently giving off branches, instead of receiving roots—the globules of blood pursuing a retrograde course.

Dr. Hall opposes the following objections to some experiments performed by Dr. Philip, (from which that distinguished physiologist argued for a contractile power in the capillaries,) in which, after the brain and spinal marrow had been crushed, an effect was observed upon the circulation in the capillaries similar to what is observed in the heart under similar circumstances; the capillary circulation like the beat of the heart being immediately arrested or impaired. 1st. The influence of the heart itself was not removed. 2d. The influence of the arteries, which Dr. Hall thinks he has proved to possess a contractile power, was not separated from that of the capillaries with regard to which the question remains to be determined. 3d. The capillary circulation was also left subject to the influence of contraction in the whole muscular system.

As regards Dr. Philip's other argument in support of a contractile power in the capillaries, derived from observing the effect of the application of various substances to the web upon the capillary circulation and vessels, Dr. H. remarks, that—1st. The pain inflicted accelerates the circulation. 2d. The struggles of the animal variously retard or arrest it. 3d. The action of the irritant upon the membranes of the web, upon the parietes of the vessels, and upon the contained blood is various and complicated, so that it is impossible to determine whether the action of the capillaries themselves be augmented or diminished, or whether these vessels, admitting them to possess any vital contractile powers, be excited or debilitated, in so complicated an experiment. From all that precedes, it is obvious, according to Dr. H., that whilst every fact relative to the capillary circulation leads us to ascribe its various phenomena to forces impressed upon it from without, there is nothing of satisfactory evidence or argument for an automatic power in them.

We may here mention that, in a postscript to chapter second, contained in the preface, Dr. H. observes, that some further deductions may probably be drawn from the experiment of applying a ligature round the large vessels connected with the heart, beyond that of the irritability of the arteries, and in favour of the absence of contractile power in the capillaries. To this he is led by the observation of the fact, that under such circumstances a peculiar, slow, oscillatory movement of the blood is observed in the arteries, whilst that of the capillaries and veins is motionless; a circumstance which could not hold if these vessels had the same power of irritability as the arteries.

Dr. Marshall Hall treats, in a separate section, “of the influence of the acts of inspiration and expiration, upon the venous circulation.” In regard to the influence of the former of these acts, he contents himself with quoting a passage from the work of Dr. Barry, whose views he seems to adopt, and with endeavouring to refute some of the objections raised against them by Dr. Philip.



In reference to the influence of expiration, he remarks, that when the circulation is seen proceeding rapidly in the web of a frog, (though previously arrested during some minutes,) it is often arrested, *de novo*, on pressing or even touching the animal—an effect arising probably from fear, and ceasing when the frog has been some time in its new situation. This cessation of the circulation, Dr. H. thinks, depends upon interrupted breathing with the action of the expiratory muscles, and is easily produced at any time by making a moderate pressure upon the thorax.

“In this manner, we observe the effect of the effort of expiration, actual expiration being prevented by the closure of the larynx. It seems to be the reverse of the experiment of Dr. Barry. Its influence extends to the extreme parts of the circulating system. The influence of inspiration, in Dr. Barry’s experiment may do so too: but I confess I think it remains to be determined, where the influence of inspiration and of the atmospheric pressure begins; or in other words, how far it extends from the thorax itself.”

The author next enumerates various modifications in the flow of the blood along the minute and capillary vessels. He remarks, that under the influence of certain modifying causes, as pressure, the struggles of the animal, a ligature round the limb or large vessels, excision of the heart, the flow of blood along the minute arteries and veins and capillary vessels, becomes variously pulsatory, oscillatory, retrograde, or arrested, in one or other of these three series of vessels.

As we cannot make sufficient room for the author’s details on these subjects, some of which have already been adverted to by us, we must refer for them to the work itself, and terminate the analysis of Dr. Hall’s second chapter with the following quotations from a “postscript” contained in the preface.

“The due diffusion of the blood in the minute and capillary vessels, appears to be regulated by a principle of tension subsisting between the contents of these vessels, their parietes, and the integuments. It is on this principle that the blood leaves the vessels of the web as the powers of life decline. It is on this principle that the blood flows into other channels when its proper channel is obstructed. It is on this principle that the blood flows in all directions to the point at which a vessel is wounded or opened, as in the experiments of Haller and Spallanzani. It is on this principle, that there is an apparent circulation in the minute vessels after the excision of the heart, or the division of the large vessels of a limb. This movement of the blood is towards the point of division, and therefore retrograde in the arteries. The effects of increased tension in the integuments are readily seen on extending the web more or less tightly; a feeble circulation is perfectly arrested, and the more powerful circulation is greatly modified by this means.” “This tension of the integuments is, I think, the source of many of the phenomena of the minute and capillary circulation.”

The next subject to which Dr. H. directs the attention of his readers is, the influence of the brain and spinal marrow, upon the circulation. Previous to stating his own experiments and observations on that point, he gives, by means of long quotations, an account of those of Spallanzani, Fontana, Whytt, Legallois, Philip, Clift, Flourens, all of whom have investigated, with various results, this interesting physiological question. We shall not follow our author in these details, because to do so would necessitate more room than we can conveniently spare, and because the writings of most of the physiologists we have enumerated are of easy access. Nor shall we enlarge much on the facts and experiments

upon which Dr. Hall has founded his opinion on the subject before us, as it will be sufficient for our present purposes to offer a summary of his conclusions. Before doing this, however, we must be allowed to state briefly our author's views respecting the criteria of the power of the action of the heart, and the nature of the action of the heart after its removal from the body.

Legallois judged of the power of the heart by the fulness of its carotids and by the hæmorrhage observed on amputating a limb. Similar modes of judgment were adopted by Dr. Philip, who, however, added to them the observation of the circulation in the web of the frog. Dr. H. is not satisfied with these modes, and thinks it is essential to observe the results of the experiments with greater minuteness. This may be done by attending to the changes which take place in the circulation of different parts. For example, the circulation first ceases—

“In the extreme, and then in the proximate parts of the web; first in the capillaries and veins, and then in the arteries. It may still be seen in the lungs, however, in which it ceases in the same order, in the distant parts and capillary vessels first, then in the larger arteries; at length the lung ceases to be moved by the power of the contraction of the heart. Even at this period, the apparent action of the heart itself is vigorous and regular, and continues so for a very considerable time. Criteria of the power of the heart are thus afforded us, in the continuance of the circulation, first in the web, and next in the lung, and lastly in that of the beat of the heart itself.”

Dr. Hall refuses to admit, that the action of the heart, after the removal of the brain and spinal marrow, or where that organ is taken out of the body entirely, differs in any manner except in feebleness, from its natural beat; an opinion held by Legallois, who referred the movements of the heart, under such circumstances, to the exercise of its irritability, and assimilated them to those elicited in other muscles, during some time after death, by irritation.

“That this observation,” Dr. H. says, “is unfounded, appears from the following facts. If instead of removing the heart alone, it be removed together with the other viscera, in the salamander or the toad previously rendered insensible, its beat is not only still observed to continue, but the circulation is distinctly seen in the pulmonary, minute and capillary vessels. A slight degree of this circulation is still seen, if a double ligature be carefully passed under the heart, and then separated and tied above and below this organ and the roots of the lungs. In this case every part is removed except the heart and pulmonary vessels; so that it approaches as nearly as possible to the case of the removal of the heart alone. Yet the action of this organ is still such as to carry on in a slight degree, and for a short period, the circulation of blood through the pulmonary artery and a few of the capillary vessels. It may also be observed, that in the last experiment, scarcely any part of the nervous system remained; its masses were entirely removed, its filaments alone were left to influence the result of the experiment.”

After detailing a number of experiments instituted for the purpose of ascertaining the effect of removing the whole of the brain and spinal marrow at once, Dr. Hall allows that they all appear to prove that the action of the heart is enfeebled from the moment it is deprived, suddenly, of the combined influence of the brain and spinal marrow. The connexion of this organ, with the nervous system, seems, according to him, to be precisely of the same nature as that of the voluntary muscles. Both possess a degree of irritability independently of

the large masses of the nervous system; both if separated from these masses, gradually lose this irritability. The irritability, he adds, is doubtless a faculty or property of the muscular fibre; yet it may become extinct without any obvious change in that fibre. Its continuance or renewal depends ultimately upon the masses of the nervous system.

“The experiments which have been detailed, seem to prove, that from the moment of the abstraction of the brain and spinal marrow, the irritability of the heart begins to fail. The circulation is first enfeebled, then lost, in the most distant parts of the system, then in parts less and less remote. The distance to which it extends may be aptly taken as expressive of the remaining power of the heart, the principal organ of the circulation.”

“These experiments appear on the other hand to disprove the opinion of Legallois, repeated by M. Flourens, that the power of each part depends upon that portion of the spinal marrow which is adjacent to it, and from which it receives its nerves.”

Dr. Hall shows, by means of experiments, the error of Flourens, who maintains that the spinal marrow exercises an influence over the circulation, merely in so far as it influences the respiratory process; and that the first of these functions is arrested by the destruction of the medulla oblongata. In Dr. Hall's experiments the destruction of this part did not produce the effect in question any more than the destruction of any other portion of the cord. He consequently concludes that the circulation no more depends upon the medulla oblongata than upon the medulla spinalis.

Legallois was of opinion that the circulation of a part was arrested by the removal of that portion of the spinal marrow from which it derives its nerves. M. Flourens at first adopted the same view of the subject; though he afterwards appears to have modified it from the results of more recent experiments in which the spinal marrow in frogs and in some kinds of fish was destroyed, while the circulation in the lower parts of those animals—the very parts supplied by this portion of the cord, continued. Dr. Hall's experiments have, as we have seen, afforded the same results. These experiments also confirm an observation made by Legallois, that by destroying small portions of the medulla spinalis at a time, and at intervals, a much larger extent of that cord can be removed without arresting the circulation than if the destruction of the whole had been effected suddenly. Dr. H. accounts for this circumstance in the following manner.

“If a portion of the masses (nervous) be removed, and if this be compatible with life, the animal is reduced to a lower degree in the scale of organized beings. It lives as a still lower animal; and it becomes capable, on this principle, of enduring new privations. I doubt not that, in this manner, the whole brain and spinal marrow may be removed, and that the animal may live, sustained by the mere ganglionic masses, and the cutaneous respiration.”

He adds that from the moment, in the experiments performed for ascertaining the above point, the whole of the brain and medulla was destroyed, the circulation gradually, progressively, but slowly failed. From this Dr. Hall once more concludes, that it cannot by any means, be said that the circulation is independent of the brain and spinal marrow. It is proper to observe, however, that in a chapter on the influence of other organs upon the heart and circulation, he



explains more explicitly than he had heretofore done his views in relation to the nature of the connexion between the nervous centres and the heart.

“Whatever may be the character of that connexion which subsists between the brain and spinal marrow, and the heart and the circulation, the same thing is observed in regard to other organs or parts, and the organs of circulation. There may be a difference in degree, but there is none in kind. The heart may be more independent of a limb than of the spinal marrow; it may be less influenced by crushing the former than the latter, but still the principle is the same. It is one of mutual connexion rather than of individual function.”

He attributes the transmission of these effects to the medium of the organic structures, and says that if the heart and circulation be viewed as independent of the brain and spinal marrow, yet impressible through them, this is equally true of their relation to the stomach or a limb. He admits that it is impossible to remove the brain and spinal cord at once without impressing the powers of the circulation, so that the motion of the blood in the capillary vessels immediately fails in the extreme parts of the system, and gradually in those placed nearer the heart; but adds, that crushing the limbs, &c. annihilates the circulation, and yet this function is, strictly speaking, independent of any of the limbs.

Dr. Hall states that he has been greatly disappointed in repeating the experiment of applying stimulants to the brain and spinal marrow in the batrachia. The results which he obtained differ very materially from those recorded by Dr. Philip. The latter, as many of our readers may perhaps recollect, found that alcohol, when applied to the muscular fibre, impaired its sensibility; that when applied to the brain or spinal marrow, it increased the action of the heart, and that solutions of opium or tobacco increased that action, though in a less degree, an effect followed by a considerable diminution of energy. In the experiments which our author instituted in order to settle this point, he found that alcohol and laudanum enfeebled the circulation of the web, that a watery solution of opium obliterated the circulation, and brought on complete tetanus, similar to that produced by strychnia, and that alcohol applied to the surface of the brain and spinal marrow, previously rendered insensible by laudanum, produced no acceleration whatever either in the beat of the heart or in the motion of the blood in the web.

Dr. Hall remarks, that he has always distrusted the experiments in which irritant or stimulating substances have been applied to the web of the frog, in order to determine the question of the irritability of the capillary vessels; because this kind of experiment involves too many causes of complication, to admit of any conclusion being drawn from them respecting either the nature or function of the vessels in health, or their modifications in disease. Much of the effects obtained he refers to pain and fear, both of which influence powerfully the circulation of the capillaries, and are even sufficient when acting together, to arrest it temporarily. To these sources of confusion must be added the struggles of the animal, which are occasioned by the pain, and cause the blood to stop, to oscillate, and to become irregular in its motion. The next effect produced by such experiments is, according to the nature of the substance applied, various degrees of constriction or corrugation of the external membranes of the web itself, which will induce various impeded or even retrograde movements in the globules of the blood. The application of a stimulant will also variously affect the textures of the subjacent minute and capillary vessels, and induce propor-

tionate changes in the motion of the globules of blood; and it is almost certain, that the influence of some substances extends even to the contents of the minute and capillary vessels.

Dr. Hall presents in a separate chapter, "a brief account of the singular phenomenon of a caudal heart in the eel," and in another chapter some interesting remarks on the effects of warm water on muscular textures. But for the details on both these subjects we must refer to the volume itself.

In taking leave of the work before us, we must be permitted to express, once more, a favourable opinion of its merits. While doing this, however, we are not prepared to join Dr. Hall in all the conclusions he has deduced from his experiments and observations. But as we could not expatiate on all those points on which he appears to us to have erred or decided too hastily, without extending this article far beyond its intended limits, we have abstained entirely from obtruding our own remarks, and leave our readers to make their inferences from the views presented by Dr. Hall.

R. L. R.

XIII. *Geschichtliche Darstellung des ausbruchs der Asiatischen Cholera in Hamburg. Nach Acten und Amtlich angestellten untersuchungen.* Von J. C. G. Fricke, Dr. Hamburg, 1831. 8vo. pp. 92.

*A Historical Account of the Occurrence of the Asiatic Cholera in Hamburg, &c.* By J. C. G. Fricke, M. D.

The first case of cholera occurred in Hamburg on the 5th of October, 1831. At this period no disease had appeared within a circumference of thirty German miles of the city, presenting any resemblance in its symptoms to the epidemic then prevailing in other parts of the north of Europe. The same increased tendency, however, to gastric and intestinal affections, which had been observed to precede the appearance of the cholera, wherever the latter had heretofore manifested itself, had been noticed for several months by the physicians of Hamburg—by whom the progress of the epidemic was anxiously watched, and its phenomena, as it approached nearer and nearer to the city, studied with the utmost care.

As early as the month of May, so far as it regards quarantines and other restrictive measures, every precaution appears to have been taken to preserve the city from the visitation of the dreaded pestilence.

The first three cases of the disease occurred within the walls of Hamburg, in a place called the deep cellar, situated in Nicolai street, about three hundred feet from the harbour. This cellar is described as a damp, filthy, unventilated place, many feet below the surface of the earth, into which the water of the river Elb flows whenever the latter rises above its ordinary level. The several apartments into which this cellar was divided, were occupied by forty-one individuals, of both sexes and of all ages—the whole of whom were of the most depraved and dissipated habits.

The first case was reported to the police board on the evening of the 5th of October, by Dr. Hauptfleisch. It occurred in a drunkard, of the name of Peterson, sixty-seven years of age. He had come home about 6 o'clock on the preceding evening, and after partaking of a considerable quantity of sour milk, drank a number of glasses of ardent spirits. Soon afterwards he was seized

with violent vomiting and purging—his extremities soon became icy cold, his feet and hands of a blue colour, his eyes sunken, and he was affected with cramps of the lower extremities. He died on the evening of the 6th.

The deceased had resided for four months in the cellar, and for the last twenty weeks he had not been out of the city, nor had he recently been in company with any foreign sailor, or indeed with any stranger. At the time of his death, there were five or six persons in the same apartment.

The second case of cholera occurred on the 7th of October, in a prostitute, of the name of Bechman, residing in the same cellar. She was attacked about 9 o'clock in the morning, and died at 11 in the evening. Two days before her death, she had been to dig potatoes in the country, about three-eighths of a mile from Hamburg, and on her return had been completely drenched with rain. She was almost constantly in a state of intoxication.

Another case occurred on the 7th, in the same cellar; this was in a drunkard of the name of Summers; thirty-seven years of age—he was removed to the hospital, where he died on the 9th.

Several other cases occurred in the cellar referred to, before the 11th of October, when the remaining occupants were removed, together with eighty-five other individuals from similar habitations in other parts of the city, to a large hemp magazine, situated in the suburbs of Hamburg, where they were carefully guarded, and supplied with provisions and other necessaries by the government.

By the most careful and minute investigation on the part of the police board, it was ascertained, that none of the individuals who were attacked by the disease in the cellar, where it first broke out, had been recently in any place where the cholera prevailed, or had had any intercourse with persons who had arrived within a short period from any foreign port.

Between the 7th and 8th of October, in addition to the cases which have already been noticed, a number occurred in various and distant parts of the city, in individuals who had had no intercourse with those previously attacked, nor with each other.

The whole number of deaths from cholera in Hamburg, up to the 22d of the month, was only three hundred and eight. The number attacked is not given by Dr. Fricke, and of course he presents us with no data from which to judge of its comparative mortality in that city. The cases in which the disease proved fatal, were almost exclusively confined to the lower classes of the population, inhabiting deep, filthy, and damp cellars, or small, narrow, dark, and crowded courts and alleys, into which the rays of the sun seldom penetrate. Most of them were persons of dissipated or very irregular habits. Of the deaths, two hundred and seventeen occurred in men, seventy-eight in women, and thirteen in children. The ages of whom are shown by the following table.

Under 10 years,	-	-	-	-	-	-	-	13
Between 10 and 20	-	-	-	-	-	-	-	13
“ 20 “ 30	-	-	-	-	-	-	-	49
“ 30 “ 40	-	-	-	-	-	-	-	73
“ 40 “ 50	-	-	-	-	-	-	-	65
“ 50 “ 60	-	-	-	-	-	-	-	50
Above 50 years of age,	-	-	-	-	-	-	-	45



In regard to the important question, in what manner was the cholera produced in the city of Hamburg, Dr. Fricke conceives, that the simple relation of facts, which he has given us in the present work, shows fully, that the disease could not have been introduced from without, nor depended for its origin in any degree upon contagion. Independent of the circumstance of the first cases of the disease in Hamburg, occurring in individuals who had had no intercourse with any person coming from a port in which the disease prevailed, the following facts confirm the correctness of the author's conclusions.

It is certified by the proper authorities, that up to the 17th of October, no case of cholera occurred in the upper harbour—and only one in the lower harbour. This case occurred in a sailor on board a vessel just arrived from Bahia. He was attacked in the night, between the 8th and 9th of October, and was immediately removed to the hospital, where he died. With the exception of the captain, no one of the crew of this vessel, including the deceased, had any communication with the shore, or with any inhabitant of the city previously to the 10th of October.

In the hemp magazine, to which the persons removed from the deep cellar in which the cholera first occurred, and from other unwholesome localities were removed, there were collected on the 12th of November, two hundred and thirteen individuals, of the lowest classes of the city, the great majority of whom were habitual drunkards. Among these persons, only twenty-seven individuals in all were attacked with the disease; the first case occurring on the 27th of October, the last on the 1st of November.

Among the four hundred nightly watch, who were obliged, almost constantly, to come in contact with individuals labouring under cholera, no one case of the disease occurred.

None of the physicians of Hamburg were attacked, nor any of the attendants in the hospital.

On the 19th of October, one of the prisoners in the house of detention was attacked, he had been under arrest since the 7th of the month, during which time he had had no intercourse with any persons from without.

In the immediate neighbourhood of Hamburg, notwithstanding the communication with the city was interrupted, no case of cholera occurred previously to the 23d of October, when it made its appearance in Moorburg. In Bergedorf, one case occurred on the 28th of October, and on the same day the epidemic broke out in Lüneburg—but neither in Harburg or Geesthacht did a single case occur up to the 6th of November.

The work of Dr. Fricke contains much useful information. The account of the weather preceding the appearance of the cholera, the meteorological observations made during the first fifteen days of October—and the table of births and deaths for ten years from 1820 to 1830 inclusive, present many highly important facts, which cannot well be compressed within the limits of a bibliography.

## QUARTERLY PERISCOPE.

### FOREIGN INTELLIGENCE.

#### ANATOMY.

1. *Structure of the Testicle.*—M. LAUTH, of Strasbourg, has communicated to the Royal Academy of Medicine of Paris, some researches made by him, relative to the structure of the testicle. His investigations have occupied him two years, and were made upon three hundred testicles at least. M. Lauth states, that the seminal ducts are composed of the following parts: 1st, the *seminiferous vessels*, varying in number from 821 to 855; mean number 810. These are not, he says, isolated, as is asserted, but freely anastomose together, and ramify so as to constitute a large plexus, which constitutes the origin of the seminiferous vessels. These last consequently do not present at their origin free extremities; at least, he says, that he has never seen this last disposition except in a single instance, which he considers as an anomaly. The calibre of the seminiferous vessels filled with mercury, varies from 1-110th to 1-160th of an inch; mean 1-147th of an inch. The length of each, including the anastomosing branches, varies according to the subject, from 13 inches 9 lines to 33 inches, mean 25 inches; consequently, the total length of all the ducts together, is from 966 feet to 2307 feet, mean 1750 feet. The vessels form a number of convolutions, except near their terminations, where they are almost straight, and where they enlarge to from 1-55th to 1-120th of an inch, mean 1-108th of an inch.

2d. The *rete testis*, formed of from 7 to 13 anastomosing vessels, whose calibre varies from 1-50th to 1-108th of an inch, mean 1-79th. It receives the seminiferous vessels.

3d. The *vasa efferentia*, which arise from the *rete testis*; their number varies from 9 to 30; commonly there are from 12 to 14. From their convolutions, which constantly increase in their course, they assume the appearance of *rascalee coats*. Their canal, at first very large, (1-55th to 1-80th of an inch, mean 1-64th,) gradually diminishes towards their insertions in the vas deferens; where their size is from 1-108th to 1-180th of an inch, mean 1-156th. These insertions take place successively at distances of from  $\frac{1}{2}$  to 6 inches, mean 3 inches.

4th. The *vas deferens*, single, 1-55th to 1-100th of an inch in thickness, commonly 1-78th of an inch; its length varies in different subjects from 16 feet 4 inches to 21 feet 6 inches, mean 19 feet 4 inches. This tube is regularly convoluted on itself in four series of convolutions.

5th. The *appendicula epididymi*, (vascular oherans,) not always existing, rarely double, never ramified. Perhaps it is furnished with valves, which direct the fluids to the vas deferens. This appendicula, M. L. says, appears to him to be mucous gland of a peculiar form, but certainly is not a lymphatic vessel, as has been said.

In a testicle of mean size, the semen passes through a distance of about 21 feet 7 inches to arrive at the commencement of the vas deferens. M. Monroe's

estimate of 42 feet, is according to M. L. extravagant.—*Gazette Medicale de Paris*, Dec. 10th, 1831.

2. *A Third proper Ligament of the Scapula, not yet observed in our Dissectors, or by Anatomical Lecturers.* By E. B. SHERIFFS, Esq. Brechin.—No ligaments in the human body have been more particularly described, or perhaps better classified by anatomists, than those connected with the *scapula*; neither is any joint more deserving of attention from its surgical relations than that of the shoulder, into the formation of which the *scapula* enters.

The ligaments connected with this bone are described as either proper or common to it. The latter are described as two in number, viz. the anterior, coraco-acromial or deltoid, and the posterior or coracoid. I, however, universally find a third, extending from the root of *acromion* process to the neck of the *scapula*, and hence it may be consistently denominated the *acromio-cervical* ligament. I generally find the *arteria infra spinalis*, along with its accompanying nerve, pass under this ligament.

In exposing this ligament, I must recommend great care to be taken, as it is imbedded in a quantity of cellular substance, and being very weak, it may readily be removed.

I have presented the Hunterian Medical Society with a ligamentous preparation of the shoulder, in which the coraco-cervical ligament is plainly developed.—*Ed. Med. and Surg. Journal*, for April, 1832.

## PHYSIOLOGY.

3. *Lymph of the Cerebral Ventricles.*—It has been observed by many authors at the head of whom may be placed John Hunter, that the lymph of the cerebral ventricles does not coagulate either by the action of heat, nor by that of alcohol or of acids; this remarkable difference, since confirmed by Dr. Odier, sufficed to indicate its composition being different from that of the serous fluids of the abdominal and thoracic cavities. A contrary opinion having been adopted by some physiologists, M. HALDAR determined to investigate the subject experimentally.

The fluid under consideration is colourless, perfectly transparent, almost inodorous, and with a sensibly muriatic taste; it has little viscosity, does not change the colour of the tincture of marsh mallow; alkalies produce no change; oxymuriate of mercury and the muriate of tin throw down a dirty white precipitate; nitrate of silver forms a coagulum which becomes brown on exposure to the air; the decoction of galls produces a yellow flocculent deposit; finally oxalic acid and the oxalate of ammonia cause a slight white precipitate. These experiments showing the fluid to contain a muriatic salt and several animal substances, to isolate them M. H. resorted to the means employed by Bostock for the analysis of animal fluids, and other known means. The result of these researches show the fluid to be composed of water, 96.0;—muriate of soda 1.5;—albumen, 0.7;—gelatine, 1.0;—mucus, 0.4;—phosphate of soda, and of lime, a trace;—loss, 0.4.—*Journal de Physiologie*, Tom. LXXIII. and *Bull. des Sc. Med.* Sept. 1831.

4. *Case of Deficiency of the Parietes of the Abdomen and Anterior Wall of the Bladder, with Clinical Remarks.* By J. W. EARLE, Esq.—The subject of this case is a female, fifteen years of age, who had been under Mr. Earle's care in St. Bartholomew's Hospital five years ago, when he had constructed for her an instrument which materially contributed to her comfort. This instrument having been stolen from her, she has recently applied for another.

Upon examination, the following state of things is now observed. A deficiency of a large portion of the lower part of the parietes of the abdomen, as also of the



anterior wall of the bladder, so that the mucous surface of its posterior wall protrudes forth at the opening in the abdomen. It is a red, vascular, sensitive, pulpy surface, defended by a large secretion of mucus, and which has very much increased in size since her former sojourn in the hospital. At its lower part the enlarged ureters are seen to open, from which a constant distillation of urine is taking place, although she has sometimes the power of retaining for a short time a few drops in the lower ends of these canals, and afterwards ejecting them in a jet. At the upper portion may be observed some cicatrices, the result of some attempts to destroy the sensible mucous surface which had been formerly made in that situation. Half an inch below the protrusion, there are two minute spots, (exuding a milky secretion,) into which a small probe can be passed, and which no doubt lead to the vagina. These openings did not exist when she was before in the hospital, or if they did, they escaped observation, which latter circumstance is not at all probable, as she underwent repeated careful examination, and, indeed, during her stay this time, the central band separating these orifices has been observed to become very much more narrow. This is a very curious fact, for the development of this part would seem to be cotemporary with the approach to puberty, which is now taking place, the uterus also being fully developed, as ascertained by examination by the rectum. There is a portion of skin analogous to a perineum, and above a bifid clitoris, and the rudiments of the nymphæ may be observed. The labia are much separated, flattened, and broader, converging as they descend. A great interval prevails between the ossa pubis, and the recti muscles are widely separated above the protrusion, this space being filled by a firm tendinous expansion and the common integuments. So great a separation of the pubes, of course, removes a great portion of the bony support; the pelvis is widened, and her gait becomes what is called *waddling*, in a great degree. At present the ligamentous connexion between the bones is much firmer, but as large a space as ever exists between them. There is no umbilicus; probably the vessels entered just above the protrusion.

From the consideration of this and other similar cases, we observe that the bladder is not an organ essential to life, although eminently conducive to the comfort and convenience of the individual.

These cases afford us an excellent opportunity of ascertaining the structure and vital properties of mucous membranes, and of exhibiting the fallacy of those arguments which would in many respects identify them with common integument. In the present instance it has remained from birth quite unchanged in its appearance, although constantly exposed to the influence of the atmosphere. It also resisted, in a wonderful manner, when she was formerly in the hospital, the attempts which were made to destroy it, for the purpose of effecting cicatrization, even by the strongest escharotics, being so very speedily reproduced. Haller, and many physiologists since him, have remarked the great analogy prevailing between the common integument and mucous membrane, and indeed some proceed so far as to consider them as mere modifications,\* and that in the mucous membrane we have a minute epidermis existing, and also that mucous membrane, upon long exposure, will take on the appearance of common integument. The present case may be said to present a refutation of such opinions. Although the extremity of the rectum, the vagina, the mouth, or even the œsophagus, are lined by a *prolongation of skin*, which may very readily become altered by exposure; yet a *mucous* surface cannot be converted into skin. The effects of inflammation have given rise to the formation of pseudomembranes, and these have been the cause of much illusive reasoning. In the present case the characters of the mucous membrane have been retained, and on attempting, we could not even compel it to take on those of skin. Thus

\* There is a remarkable analogy between the skin and mucous membranes. The latter may be viewed as *prolongations* of the skin over internal surfaces, modified only to suit the difference of place, or the skin *may* be said to contain the elements of the mucous tubes, but more firmly and closely wrought, and protected by the cuticle, as the latter are protected by the mucus they secrete.—*Mayer's Physiology.*

also we see in a case of vesico-vaginal fistula a marked difference between the two exposed surfaces of the vagina and the bladder, although they may be contiguous, the one being very slightly, the other highly vascular. We may have an artificial anus for years, and yet no such alteration take place in the mucous membrane. So when the mucous surface of the male urethra is exposed, its sensibility will continue until by some means we destroy such surface.

This case, moreover, affords a good opportunity of putting into practice experiments on the nature of the urine—experiments which, as far as the individual herself is concerned, are perfectly innocent. When she was in the hospital before, Mr. Earle performed a series of such, in order to ascertain the rapidity with which certain substances might be detected in the secretion of the urine after they had been taken by the mouth. Various substances, such as rhubarb, turpentine, asparagus, were administered, but, unfortunately, Mr. E. had mislaid the memorandum containing a detail of the results. He, however, perfectly recollected that the shortest time in which the peculiar violet odour could be detected in the urine, after turpentine was swallowed, was four minutes and a half; the odour peculiar to asparagus in eight minutes: a most extraordinary result, when we take into consideration that the substance must have undergone the process of digestion and absorption, and traversed the round of the circulation, previously to being eliminated by the kidney. It was Mr. E.'s intention to repeat some of these experiments, and try others, relative to the power of medicines in producing an alkaline or acid state of the secretion; an important investigation, as determining how far we can call in chemistry to the aid of medicine in the treatment of certain classes of diseases. This case he considered favourable for trying such, as, in the ordinary mode of doing so, the secretions of the kidney often undergo some changes in the bladder, especially if this viscus be diseased in any way.

This may certainly be termed a very rare case, if we regard the sex of the individual; for while there are but seven or eight recorded cases of such malformation in the female, there are at least sixty related of its occurrence in the male.

Among the instances recorded of its occurrence in females, there is one published in the Philosophical Transactions, in which the woman became impregnated and bore a child. In another, reported by Dr. Neville, the umbilicus was natural. Another very interesting case is also recorded by Mr. Coates, in the Edinburgh Medical and Physical Journal.

There are certain characters common to all these cases occurring in either sex, while there are others peculiar to the sex, but which have no reference to the urinary, but to the genital system.

In both cases we have a want of bony union between the ossa pubis, which are, in different cases, more or less separated. This might have been considered as the primary defect upon which all the others hinge; but that in the case related by Mr. Coates, union did exist between the two bones—the urethra passed over the pubes, and was pervious to the extent of half an inch, and then terminated in a cul-de-sac. Moreover, we have in all cases an enlargement and a greater contractile power of the ureters—an absence of the urethra, as also of the umbilicus. In all these circumstances, then, both sexes accord. There are, however, some points of difference. In the *female*, the uterus, ovaries, and vagina, all exist, although this last may be closed. In the present instance, no opening existed formerly, but one is now taking place; and the same would very probably have occurred with respect to the other cases, had they lived to the period of puberty; and, indeed, such a closure as the present need not operate as an obstacle to impregnation, since we see it take place in cases of imperforate hymen which have required liberation by a surgical operation; and in these other cases, if the organs were in a fit state, there could be no objection to making an opening into the vagina. Thus, then, the female has the power of continuing her species, which the male does not possess. In one recorded case, the female bore a child; and there can be little doubt that it would be pos-



sible for this young person to do the same. In the *male*, the penis is invariably short; it may extend an inch in length, being generally broad at the root, and then becoming bifid, there is no prepuce or urethra. In some instances there is an open groove for some distance, with a vascular mucous surface—sometimes a mere slit; at its base is usually the fossa navicularis and the caput gallinaginis. The testes are natural and usually much separated. Indeed, the scrotum being completely divided and separated, has very much the appearance of labia, which, (conjoined to the diminutive penis, being mistaken for an enlarged clitoris,) has given rise to the supposition that these individuals are hermaphrodites. The vas deferens terminates variously—in the ureter, perineum, or even rectum. The venereal passion exists, but the individual has not the power of gratifying it. The anus, in the male, is usually perfect, but placed more forward than natural; though Bertolinus relates a case in which the patient vomited all his feces for forty years. Littré also relates a case in which there was neither cæcum, colon, or rectum, the ilium terminating in a cul-de-sac.

Dr. Duncan has framed an hypothesis respecting these cases, founded on the supposition of the primary cause being an impervious state of the urethra.

"As soon as the urine begins to be secreted, it will accumulate in the bladder, and distend it, as well as the ureters and kidneys. In the adult, ischuria proves fatal in a short time, both from the rigidity of the containing parts preventing them from yielding to the distending pressure, and from the reabsorption of an excrementitious matter highly deleterious to animal life. In the early fœtus, however, circumstances are extremely different, in it the urine can contain very little, if any, excrementitious matter, and the whole containing parts are soft and plastic, the bones scarcely cartilaginous, and no where knit together. The bones of the pubes, therefore, yield to the distending pressure, and are separated gradually from each other, until they become so firm that it has no longer any effect upon them. But by this separation of the bones of the pubes the recti muscles are also separated, and the bladder is deprived of its natural support at the anterior portion, while below, behind, and above, it is supported by the bones of the pelvis, spine, and various firm viscera. The whole distending force will therefore act on the anterior portion, which, with the skin, will be protruded forwards, and becoming thinner, will at last give way and burst outwardly. The bladder, no longer able to contain any urine, will contract, and, by the pressure of the abdominal viscera, will be protruded through the ruptured aperture. Thus, in addition to an impervious urethra, we shall find the bones of the pubes separated, the ureters opening externally through a ruptured and inverted bladder, and the ureters and kidneys very much enlarged; which are all essential circumstances of the malformation."

This hypothesis is ingenious, but wholly untenable, as it presupposes the secretion of urine to take place at a very early period of the fœtal existence; and even should this explanation be correct, it does not explain why, when the bladder had given way, the ossa pubis did not approximate and unite in a symphysis. The enlarged state of the ureters is rather referable to the efforts of nature to supply the deficiency of the bladder. Moreover, the case related by Mr. Coates affords a direct contradiction to this theory. It is much more probable that these effects are all of simultaneous occurrence from the same defective formation.

At the conclusion of his lecture, Mr. Earle referred to the case of a child on whom he operated for nævus on the forehead, and who had also a very peculiar malformation of the genital organs. The penis was situated in perineo, and directed backwards, so as to have caused the child to be retromingent, if the urethra had been perfect; this, however, terminated by an open surface in perineo. In this case, at the time of birth there was a firm membrane closing this opening, which was divided before any urine could pass. This case affords additional proof, if any were requisite, against the hypothesis of Dr. Duncan, relative to the probable cause of defective organization of the bladder.—*Lond. Med. Gaz. April, 1832.*



5. *Analysis of Healthy Blood.* By M. L. R. LECANU.—We noticed in our preceding No. the interesting researches of M. Lecanu into the chemical composition of the blood. The following table, from the *Journal de Pharmacie*, for Sept. 1831, exhibits the different constituents, and their proportions.

Water	-	-	-	-	-	780.145	-	-	785.590
Fibrine	-	-	-	-	-	2.100	-	-	3.565
Albumen	-	-	-	-	-	65.090	-	-	69.415
Fatty matter;									
a. crystalline	-	-	-	-	-	2.430	-	-	4.300
b. oily	-	-	-	-	-	1.310	-	-	2.270
Colouring matter	-	-	-	-	-	133.000	-	-	119.626
Extractive soluble in alcohol and water	-	-	-	-	-	1.790	-	-	1.920
Albuminate of soda	-	-	-	-	-	1.265	-	-	2.010
Muriate of soda	}	Alkaline	}	-	-	8.370	-	-	7.304
Muriate of potassa									
Carbonate									
Phosphate									
Sulphate	}			-	-	2.100	-	-	1.414
Carbonate of lime									
Carbonate of magnesia									
Phosphate of lime									
Phosphate of magnesia	}			-	-		-	-	
Phosphate of iron									
Loss	-	-	-	-	-	2.400	-	-	2.586
Total	-	-	-	-	-	1000.000	-	-	1000.000

PATHOLOGY.

6. HACKMANN on *Softening of the Spleen*.—Softening of the spleen is sometimes sporadic, but more frequently it is either epidemic or endemic: in the latter cases it is intimately connected with other diseases which are in themselves epidemic or endemic likewise. *Spleno-malacie* is frequent, not only in the human subject, but is common also among animals, especially among the ruminantia. When sporadic, this affection follows sporadic intermittents; when epidemic, it accompanies epidemic fevers in hot and marshy countries. In the last epidemic which ravaged the north of Germany, softening and hypertrophy of the spleen were phenomena so constant, that Dr. DONNÉ even ventured to call the disease *splenitis epidemica contagiosa*. Fevers in Sardinia likewise often terminate in softening of the spleen: this lesion, however, is always the effect of a more general disease; at least, the author has never met with an idiopathic case.

According to the opinion of Hackmann, softening of the spleen depends upon over-congestion, or venous inflammation, of which there are two stages, one of irritation or congestion, and one of true ramollissement. The symptoms of the first are, fever with gastric disorder predominating, but of which the type will vary according to the season, the climate, or the constitution of the patient. In hot and marshy countries, or even in more temperate parallels during the summer, the access of fever is preceded by an ordinary shivering, but the intervals are so slight that it might perhaps be considered a remittent. The rigors, which vary in duration and intensity, are followed by a burning heat, after which a profuse perspiration prevails. At the beginning of the attack, the patient vomits a clear fluid, often mixed with bile; which ejections con-

tinuing during the cold, cease on the access of the hot stage, and recur with the recurrence of each fit. In northern climates, these symptoms diminish as the disease advances; while, in tropical countries, they continue unabated, as the black vomit of the yellow fever will witness. Hæmatemesis only occurs in chronic cases of spleno-malacie. Another essential symptom of this disease is præcordial distress marked by similar exacerbations and remissions with the fever, and which probably depend upon the compression of the diaphragm by the enlarged spleen. This symptom is never entirely absent in any case, and sometimes it is developed in so great intensity as to become truly *orthopnea*.

Of other diagnostic signs of this disease the principal are, great lassitude, pains in the limbs, vertigo, flushed face and eyes, and great thirst, (which, if satisfied, increases the præcordial pain;) the tongue at first is of a pale red, and covered by a yellowish fur, by degrees it becomes of a bright red, and cracks; but it remains generally moist, and is often studded with aphthous eruptions. The abdomen is swelled, soft in the umbilical region, but not tender, pain being only felt when the body is bent and pressure made towards the stomach or spleen. In the epigastrium, a very sensible pulsation may be perceived; and as the disease advances, this pulsation extends also to the region of the spleen. Most frequently the fever is ushered in by diarrhœa, (ten or twelve evacuations in twenty-four hours;) the matter passed being dark-coloured, greenish, watery, and very fetid. It is during the feeble exacerbations that the stools are most frequent; and this circumstance, joined to the vomitings, gives to the disease an appearance of cholera. The patients are excited, they sleep but little, wander much, and become delirious; the pulse is variable, at first full and soft, afterwards becoming small and very frequent; sometimes, however, it does not vary much, but remains slow, and occasionally intermitting.

The stage of ramollissement seems to be shown by a great collapse, and the access of typhoid symptoms, and death ensues as in cases of fever, or follows a state of coma resembling apoplexy. This apoplectic state is a phenomenon that frequently occurs in ramollissement of the spleen.

The progress of *spleno-malacie* is, in general, rapid, like that of the fevers of which it is the result; thus, ramollissement may take place in the course of eleven or twelve days. Still the disease may assume a chronic form, as two cases recorded by Bonet and Portal, and one observed by the author, have sufficiently shown.

There are different degrees of ramollissement: in the first, the spleen is gorged with blood of a black or dirty brown colour, amongst which the reticular tissues cannot be distinguished; the structure is more friable than when in a healthy state, and pressure will discharge a great quantity of dark-coloured blood, so that there will remain nothing but a sac containing black blood, and a soft matter resembling chocolate.

In the more severe forms of ramollissement, the spleen bursts spontaneously, without any previous violence, during the life of the patient, and the matter escapes into the abdominal cavity, when death speedily ensues. The volume of the viscus thus softened is not always much increased, but most frequently the bulk is considerably augmented if the individual has suffered from endemic intermittent or remittent fever.

Of the mode in which ramollissement of the spleen is effected nothing more is known than of ramollissement in general; however, most pathologists agree that such morbid alterations result from sanguineous congestion and inflammation, disorganizing the viscus, and ending in gangrene.

Towards the conclusion of his memoir, the author relates eight cases of acute spleno-malacie, extracted from the writings of Heusinger, Grotanelli, Montfalcon, and Bailly, and one chronic case which fell under his own observation.—*Lond. Med. and Phys. Journ. from Hacker's Litterarische Annalen.*

7. *Abscess in the Parietes of the Left Ventricle of the Heart.*—An instance of this has been met with by M. C. BROUSSAIS, in a young soldier who died in the

military hospital of Gros-Caillon, of confluent small-pox. The matter of the abscess was white, homogeneous and fluid, and was contained in a cyst.—*Gaz. Med. Feb. 11th, 1832.*

## MATERIA MEDICA AND PHARMACY.

8. *Mode of Distinguishing the Resin of Scammony from that of Jalap and Convolvulus Arvensis.* By M. PLANCHE.—“The resins of jalap and scammony, too often confounded in medical practice, merit to be distinguished as much on account of their manner of acting on the animal economy, as on account of the phenomena to which they give birth when in contact with chemical agents. For example, the resin of jalap is soluble in alcohol, and insoluble in ether. It is dissolved cold in nitric acid without disengagement of nitrous gas; whilst, on the contrary, the resin of scammony is soluble both in alcohol and ether, and dissolves itself in nitric acid, with the production of nitrous vapour. The resin of soldanella deports itself with these three agents nearly in the same manner as that of scammony, and although the smell and taste are very different in these two resins, and scarcely permit their being confounded, a young physician has remarked to me, that the characters which I have selected are not sufficiently prominent.

“However little foundation this objection may have, I have attempted by new experiments to remove it, and after several trials, I hit upon the following means of diagnosis.

“Pure milk from the temperature of 10 degrees above 0 on the centigrade scale up to the boiling point, *divides perfectly, and holds in suspension, the resin of scammony.*

“Under the same circumstances, pure milk brings together, and unites into a mass, the divided molecules of the resins of soldanella and jalap. In this instance two results are produced; first the discovery of an excellent criterion for the resin of scammony, which enables the inquirer to decide, upon the instant, whether this resin be adulterated with that of jalap or bindweed; and the second result is, the attainment for the scammony of a vehicle of which the savour is generally pleasing, and which may be sweetened or aromatized according to the taste of the patient. The following formula I think a convenient one; it affords an excellent dose in obstinate constipation, especially in women. Take of resin of scammony of its natural colour or decolorated with animal charcoal *eight grains*; white sugar *two drachms*; eau distillée de Laurier cerise, *three minims*; cow's milk hot or cold according to the taste of the patient, *three ounces*. The scammony is reduced to powder by trituration in a mortar. The milk gradually added, and finally the sugar and aromatic water.”—*Journal de Pharmacie, April, 1832.*

9. *Process for preparing pure Muriate of Morphia.* By MONTGOMERY ROBERTSON.—“Having now finished my illustrations of its medicinal effects in a state of purity, I shall direct the attention of my readers to what appears to me the best mode of securing this, and the readiest method of ascertaining it. And as I intend subsequently, to point out a way of obtaining, not the muriate only, but any other salt of morphia, in a state of purity, and in as far as its individual composition will allow, of uniformity also; I shall take a brief view of former processes, that the value of the improvements may be more clearly seen.

“Until the introduction of the muriate into medicine, the salts of morphia were prepared on a plan divisible into four stages; which had for their ostensible objects, the separation of the active from the inert principles,—the isolation of the morphia,—its decolorization,—and its recombination with acids. The first was accomplished by dissolving the salts contained in opium,—the next by decomposing them with an alkali,—the third by treating the precipitate



with charcoal and alcohol,—and the last by dissolving the product in an acid. Latterly, comparative purity had been obtained by decolorizing a salt of morphia, which was afterwards decomposed to procure the alkaloid for recombination. The first step has been effected at different periods by means of water, hot or cold, acidulated or plain; or lastly, by fermentation. In whatever way it is made, the infusion contains a free acid, more or less resinous colouring matter, solutions of morphia and of narcotine. The three last, intimately blended, are thrown down on the addition of ammonia; animal charcoal, and repeated crystallizations in alcohol, remove the colouring resin; but the narcotine passes untouched through all these ordeals, and from its similarity to morphia, has been generally mistaken for it. This impure product being dissolved in the acetic or sulphuric acids, the liquid is evaporated to dryness; and thus the narcotine remains mixed with the resulting salt, either in a crystalline form, (if, as Robiquet asserts, it be crystallizable,) or in the shape of a transparent coating, enveloping its particles.

“Some chemists, indeed, as Merk and Wittstock, have, by ingenious and expensive processes, obtained morphia perfectly pure. But I speak of the alkaloid as it is generally manufactured; when the object of the pharmacist being merely to procure a saleable article, purity is little valued, and not particularly sought after, when it is obtained at the expense of considerable diminution in quantity.

“It is easy to observe that the complication of treatment which these processes require; the combinations, decompositions, solutions, and crystallizations which they enjoin; the evaporations and filtrations which they direct; cannot be completed without considerable expense of time, labour, and material. But by introducing into medicine the muriate of morphia, and publishing a mode of preparing it, Dr. Gregory rendered the latter part of these processes useless, and abridged much that was tedious and objectionable. I have now to propose an improved method: which, by curtailing still further the necessary operations, will render the preparation of the muriate, much more easy and economical.

“This process has for its prominent feature the employment of *double decomposition*; a plan which secures at one step the separation of the meconic acid,—and the union of the morphia with muriatic acid. The liquid employed to effect this decomposition is the muriate of lime; an article whose cheapness renders economy in its use no object. Perhaps in other places, muriates may be found more suitable, for other reasons, but this one seems to me best calculated to enable us to procure, on the one hand the meconic acid free from colour, on the other the muriate of morphia free from narcotine.

“The first step of the process resembles that of all others, in as far as the solution of the active principles is concerned. The opium, cut in pieces, is macerated in water at a temperature not exceeding 100° F.; as it softens it is worked up into a pulp, and frequently stirred during the course of exhaustion; the infusion, as it becomes saturated, is drawn off clear, and may be immediately subjected to evaporation.

“This evaporation is conducted in a large vessel of tinned iron; and a sufficient quantity of marble, in coarse powder, is added to saturate the free acid. The muriate of lime used should contain no iron, lest, in combination with meconic acid, it give a deep colour to the liquid, difficult to be got rid off; and the quantity required for each portion of infusion, is best learned by experience. When the infusion has reached the consistence of syrup, an excess of muriate of lime is poured in, and the boiling is continued for a few minutes longer. Then the whole may be emptied into a large basin, and when cold, diluted with water, until a copious separation of resinous flocks takes place. In this way most of the meconate of lime, which is nearly insoluble, and a great quantity of colouring matter, are got rid of;—the separation of the latter being the more copious and complete, the more concentrated the liquid is before dilution, and the nearer that dilution approaches a certain point; after which,

Further dilution causes the flocculi to be partially redissolved, and to render the filtered liquid turbid.

"When these flocculi have subsided, the clear part is evaporated as far as possible, on a sand-bath; a small bit of marble being put into each dish to neutralize any free acid, and the fluid being poured off the sediment before it is permitted to crystallize. We may, at this stage, prove whether enough muriate of lime has been added, by trying if a little of the clear liquid will, aided by heat, separate meconate of lime from an equal bulk of concentrated infusion. When about to consolidate, it is stirred into a uniform mass, from which, enclosed when cold in a stout cloth, the dark fluid is expressed as completely as possible. The cake of impure muriate is dissolved in water at 70° F., and the solution filtered through cloth; whereby a large quantity of impurities will be separated without loss; the liquid, to which a small portion of muriate of lime is added, is now reëvaporated, neutralized, and treated in other respects as before. In the next evaporation the liquid, now completely free from meconate of lime, is slightly acidulated; a judicious suggestion due to Dr. Gregory, who has observed that the acid renders the colouring matter more soluble, and thus more completely separated, when the product is expressed for the third time. The muriate, which is now of a light brown colour, is next dissolved in boiling water, carefully neutralized with chalk, and mixed with animal charcoal; which, provided it do not contain a free alkali, requires no purification. Fresh portions of hot water should, from time to time, be added, until there is enough to keep the salt in solution when the liquid cools; and the whole is to be frequently stirred, that the most may be made of every particle of charcoal. The temperature should not permanently exceed 190° F. lest any of the muriate be decomposed. If the charcoal be good, and in sufficient quantity at the same time that the liquid is dilute, and frequently agitated, twenty-four hours of contact is sufficient to decolorize it so far, that on the addition of a little acid to the filtered liquid, it becomes almost colourless. This effect produced on the colour by the addition of an acid, (and any acid will do,) I cannot explain. It was first observed by Dr. Gregory, who has also remarked that muriatic acid, added to a neutral solution of muriate of the specific gravity of 1.020, when cold, and in which there is no appearance of crystallization, causes it in a short time to become a mass of crystals, which, when dried in the air, are perfectly neutral.

"The mass that results from the evaporation of the decolorized liquid, is subjected to pressure in portions of about six ounces each, tied up in well-washed cotton cloth; the superfluous ends of which are cut off, in order to prevent them from making the surface of the cake irregular. They are next put into a stove heated to about 100° F. where they remain until almost dry, when the cloth is removed and the coloured surface scraped off. After being pounded and dried, *till no more weight is lost* at a temperature of about 150° F. the muriate resembles chalk in colour and appearance, is permanent in the air, and is fit for medical use. If a little be now dissolved in distilled water, and pure potash added, crystals of morphia are presently separated, which are completely redissolved on the addition of an excess of the alkali, the absence of the characteristic milkiness, changed by heat to woolly flocks, indicating a total freedom from narcotine. A very few coloured flocculi may remain, so inconsiderable in weight as to be of no moment, and totally removed by filtration; as is any remaining yellow tinge by a fresh crystallization, if the liquid be previously well acidulated.

"In this process, if properly conducted, the loss by manipulation is trifling. The whole of the morphia is separated in a solid form in the first and second crystallizations, provided there be present in the liquid a slight excess of muriate of lime, and the evaporation be carried far enough. The great deliquescence of the muriate of lime apparently facilitates the completeness of this separation. The dark liquids expressed on these two occasions may therefore be deemed void of muriate; the mother liquids of future crystallizations, as well as



the water in which the cloths have been rinsed, are added to a portion in an earlier stage of advancement; and the coloured particles scraped from the cakes, may be joined to that about to be treated with charcoal. It is absolutely necessary that all the neutralizations be made with lime, (marble will not decompose the warm liquid, nor chalk the cold,)—that all the evaporations be carried as far as possible before setting aside to crystallize—that the mass be always stirred when consolidating—and that the mother liquids be expressed very completely from the crystals, enclosed in a cloth. The charcoal does no good until most of the resin be separated, and leaves a dark tinge in the liquid, only to be removed by acidulating. A moderate excess of muriate of lime is proper, too much renders the mass clammy, and the mother liquid difficult to express; too little causes the decomposition to be incomplete, and the muriate that is formed refuses to crystallize; but these errors are easily remedied.

“In the last experiment that I made, 54½ lbs. Avoird. of good opium were macerated at once. This quantity had lost one pound and a half of its weight previous to infusion, by standing for three months in the laboratory, having been previously reckoned 56 lbs. From it were obtained, by the process just described, 91½ ounces troy of muriate, or rather more than 11½ per cent. Several accidents happened during the preparation, from the breaking of dishes; besides the opium was not completely exhausted, nor were the mother liquids collected with due regard to economy, or I have no doubt the other ½ per cent. might easily have been made out; and 12 per cent. is, in my opinion, the utmost that can be expected from ordinary opium, losing from 8 to 9 per cent. by drying. The cost of manufacture, including the price of the opium, &c. amounted to 17s. 6d. the ounce troy. This then may be reckoned a fair trial of its success on a large scale.

“With regard to the adulteration of this article, for I fear that adulteration, though easy of detection, will still be attempted; the most likely manner of increasing its weight will be, not to deprive it completely of moisture. This may be detected, simply by ascertaining how far heat lessens the weight of a certain number of grains, and druggists are entreated to take particular care to avoid using muriate that is not perfectly dry; as this, which may proceed from accident as well as design, is, more than any other cause, likely to impair the uniformity of its preparations. In the state of powder it may, perhaps, be mixed with chalk, magnesia, starch, carbonate of baryta, sugar, and other white powders; a species of adulteration which may be completely prevented by preparing it in crystals. But as this requires more time and manipulation, I may here observe, that all insoluble powders are detected by its solubility in hot water, starch by iodine, and sugar by the taste, and the form of its crystals on evaporation. I may here too mention, that I have seen in chemical works, particular cautions given to avoid the fumes of boiling infusions of opium, as if they were highly deleterious. But though engaged for many months in examining the component ingredients of opium, and though I have been exposed for hours together to the concentrated vapours of infusions, I have never experienced the slightest inconvenience therefrom, nor do I believe there is the least particle of narcotic principle contained in them.

“These are all the particulars I have to mention with regard to the manufacture of the muriate of morphia. I come now to describe a method, by which any other of its salts may be prepared in a state of purity, from crystals of impure morphia.

“For the principle on which this process is founded, I am indebted to M. Buisson of Paris, who states in his Thesis, that the salts of ammonia are decomposed at an elevated temperature, by the salifiable vegetable bases. On trial, I found that morphia, boiled in a salt of ammonia, displaced the volatile alkali, while narcotine had no such power; and that, when morphia, mixed with narcotine, was boiled in muriate of ammonia until no more ammonia was driven off, the narcotine was left undissolved in the form of powder, while the morphia had disappeared. In order then to form a pure salt of morphia from a



Mixture of the alkaloids, I boil them in a little distilled water, dropping in, carefully, a neutral solution of the acid in combination with ammonia, until, on a further addition, no more fumes of ammonia are exhaled. The liquid is then filtered, to separate the narcotine; the morphia may be obtained by precipitation. It is proper to remark, that the crystals must be tolerably free from resin, in order that a perfect separation take place; and that the colouring matter, also, seems to have the power of decomposing the ammoniacal salt. This process may be hereafter useful in rendering narcotine pure,—a principle which, it is probable, will ere long become more esteemed in medicine, than it has hitherto been. It may be modified in various ways, to suit the convenience of the operator; and is a great aid in the examination of small portions of opium; as in estimating the value of a sample.”—*Ed. Med. and Surg. Journ. April, 1832.*

## PRACTICE OF MEDICINE.

10. *Convulsive Disease of Children.*—In our last number, we noticed a convulsive disease of children observed by M. Jadelot of Paris. It appears that this affection has been also noticed by M. GUERSENT. Two cases treated by him at the *Hopital des enfans malades* are related in the *Gazette Medicale* for 25th Feb. last. M. G. denominates the disease *idiopathic contractions*.

As attention appears not to have been sufficiently drawn to this disease, we translate the following remarks on its diagnosis and treatment from the number of the *Gazette* just referred to.

Contraction may be either symptomatic or essential. In the first case, it is connected with an inflammation of the brain or spinal marrow or their envelopes. It presents itself in the course of fevers whether these be continued or intermittent. At the period when the two preceding cases were observed, there was an infant in the wards affected with meningo-encephalitis, which presented a permanent contraction of the left arm. M. Guersent has seen the case of a young girl in whom there was a contraction of both arms, arising from a cerebral congestion connected with deranged menstruation. Rigid spasms of the muscles frequently show themselves in hysteria.

Essential contractions, on the contrary, appear independently of all organic lesion. They are superficial or deep. It is only to these last that the term of tetanus should be exclusively applied. These cases are attended with severe symptoms, a greater or less derangement or difficulty in deglutition, respiration, circulation of the secretions, indicating an alteration in the pharynx, heart, stomach, &c. the muscular fibres of which are the seats of tonic spasms analogous to those observed in superficial muscles. From all this it may be easily conceived how symptomatic trismus occasioned by a slight wound may cause death in less than twenty-four hours.

Superficial contractions are never accompanied with any notable derangement of the functions of digestion, respiration and circulation. Respiration is interrupted only when the muscles concerned in this function are themselves affected. Superficial contractions are sometimes general, sometimes local. Among these last, we ought to range torticollis, cramps, tonic spasms of the muscles of the sides, &c.

Under the name of torticollis, very different diseases have been described. This affection is characterized by a permanent rigidity of one or more muscles of the neck, with an inclination of the head and an absolute impossibility of turning it. The muscles affected, the length and thickness of which diminish at the same time that they become harder, form inflexible chords beneath the teguments which prevent the head from resuming its proper position. This affection most commonly arises from the impression of cold upon the neck. Sometimes it only remains twelve, twenty-four, or forty-eight hours; at others

it assumes a chronic form. It should be distinguished from rheumatism in which motion though not impossible is difficult and attended with pain. It ought not to be confounded with articular inflammation of the first cervical vertebra which occasions analogous symptoms.

Cramp is a contraction of the muscles of the legs and arms, and principally those of the calf. The tension of these organs takes place without any evident shortening, being attended with pain more or less acute. It is produced by the most opposite causes, lasts sometimes a few minutes, whilst at others it is protracted to eight or ten days and even during whole months. M. Guersent has seen cases of it in children. The pain is in an inverse ratio to the duration of the disease. Very acute at first, it diminishes as the disease assumes the chronic form. M. Guersent has observed contractions of the muscles of the leg in two children of the ages of ten and twelve years, which continued for two years. One of these was attacked with croup during the continuance of the disease and died. The autopsy was made with the greatest care, but no appreciable alteration was observed either in the brain or spinal marrow. The nerves, carefully dissected, exhibited nothing unnatural. But the muscles were in a state of hypertrophia, their pale tissue being filled with a considerable quantity of fat.

The subject of tonic spasm of the muscles of the flanks with corresponding shortening of the parts, has given rise to an interesting treatise published by M. Thibert, which contains many cases observed in the hospital "des enfans." Beclard has noted one case in his civil practice. A child, seven or eight years old, was suddenly seized with lameness attended with shortening of the right inferior extremity. An intelligent surgeon having been called in, had leeches and blisters applied, believing the case an affection of the coxo-femoral articulation. Beclard recognised a tonic spasm of the muscles of the right flank, prescribed a suitable treatment and the child completely recovered.

Sometimes the muscular contractions of the members affecting a great many parts are in some degree general. Almost all the muscles of volition are liable to spasm, as was seen in the patient which formed the subject of the first case. In this instance there was immobility and stiffness of the trunk and members, as though the body was composed altogether of hard and solid parts. This contraction, although it affects a great number of parts, does not, so long as it is confined to the spinal nerves, endanger the life of the patient; but it becomes much more serious when it extends to the encephalon and ganglionic nerves, as in traumatic tetanus.

The seat and nature of this disease are altogether obscure. It does not, it is true, always terminate in death, but when it does so terminate, dissections afford no light. M. Guersent has always found the brain, spinal marrow, and nerves free from any alteration. There is nevertheless a modification of innervation, and consequently an alteration of the nerves which are the agents of this, but such alteration is not appreciable with our means of investigation. Particular cases, where the muscular tissue offers an alteration from nutrition, are to be excepted.

The etiology of essential contractions is quite obscure. These manifest themselves most frequently in weakly and puny children, and in such as are addicted to vicious habits, nervous irritations, or convulsions. Among the occasional causes, exposure to cold whilst the body is perspiring, may be enumerated as one of the most powerful. It is well known that the rigidity of the sterno-mastoid muscles is usually produced by a draught or *coup d'air*, as it is commonly called. Lastly, the presence of worms in the intestinal tube and traumatic lesions, are regarded as causes of convulsions. Most of the causes seem to have been united in the case first cited.

*Treatment of Essential Contractions.*—If an individual of a sanguineous, vigorous habit, be suddenly seized with contractions, we should not hesitate to resort to one or two general bleedings. Sauvages gives the case of a gardener, who having entered into a pit whilst his body was covered with perspiration, was suddenly seized with a general contraction. He was at first treated for an



acute pleurisy, and afterwards took diaphoretics and narcotics. He recovered in seven days. With very young, weakly and puny children, warm baths, vapour baths, frictions with the oil of sweet almonds, or with a liniment containing laudanum are usually resorted to. M. Guersent thinks that opium ought not to be administered internally to children affected with contractions, except where its external use in the form of frictions is unsuccessful. Its internal use is not however so dangerous as has been commonly supposed.

We have seen it produce wonderful effects in some cases, and infants have occasionally taken enormous doses without showing any symptoms of congestion, the relief taking place on the first manifestation of the narcotic operation. Moisture of the skin is in general one of the most favourable signs, and this has led to the employment of diaphoretics, such as infusions of l'orange, the acetate of ammonia, &c. Dry frictions to the skin, vapour baths, bags filled with warm ashes, all contribute to the same effect. Purgatives should be resorted to for the purpose of keeping the bowels open. Dr. Hamilton has recommended their use and quoted cases showing their efficacy. Some English physicians have spoken of great advantages derived from the employment of the subcarbonate of iron, the doses of which they have carried to an enormous extent, (half an ounce daily.) It was administered unsuccessfully to the patient mentioned in the second case.

Contrivances to produce extension have been tried, and have succeeded in some instances where their employment has been seconded by the assistance of baths, emollients, &c. Extreme measures have sometimes been resorted to in some cases, such as the section of the muscles, but as this painful means was not successful, it has been entirely renounced.

For the purpose of procuring the introduction of fluids into the mouths of newly-born infants affected with trismus, it is useless and even dangerous to introduce the gum elastic cannula through the nares, it being sufficient to hold the infant in a lying position with its head strongly drawn backwards, and then introduce a tea-spoon between the dental arches and the sides of the cheeks. In addition to this, baths, diaphoretics, and gentle laxatives, if constipation exist, should also be tried.

11. *A Case of severe Dyspnoea, succeeded by Epilepsy, and cured by counter-irritation of the Occiput and back of the Neck.*—Communicated by W. ROMNEY, Esq. Surgeon, Worcester.—“Thomas Watmore, aged 25, a prisoner in the county goal, under sentence of transportation for life, was brought from the tread-wheel to the hospital of the prison, on the 23d of March, 1828, with very hurried and feeble respiration, amounting to panting; a small and quick pulse, and great depression of spirits; countenance pale; tongue clean; bowels rather confined. There was neither pain, cough, nor mucous rattle, on inspiration. The inspirations were from 100 to 120 in a minute, and attended with a quick convulsive action of the abdominal muscles. He bore pressure without pain, on every part of the abdomen, which was free from fulness, hardness, or tension. He was immediately ordered to bed, and a dose of calomel, a saline purgative, and some warm gruel, were given. He passed a sleepless night; the bowels acted freely; but in the morning, there was no amendment of his respiration. I took some blood from his arm, but faintness ensued, when only a few ounces had been lost. He seemed rather better in the evening, but passed a restless night, from the distress and hurry of his breathing.

“March 27th.—On repeating the bleeding this morning, although he had no dread of the operation, he suddenly became extremely faint, and respiration being suspended, apparently from spasm of the diaphragm, he had nearly expired. Camphor and opium were now had recourse to in considerable doses, but with no good effect. A dozen leeches were applied to the epigastrium, which bled freely, and he got a warm bath of the temperature of 90 degrees. He then appeared relieved for a few hours, but the hurried breathing returning, the leeches were repeated, followed by the warm bath, and a large blister to



the epigastric region; and his bowels, which were confined, were relieved by castor oil. In spite of these and similar remedies, the hurried breathing, sleepless nights, and mental despondency, continued with very few and short intermissions till the 26th of April, on which day his respiration suddenly became more hurried than ever, and this distressing affection continued unabated for several days and nights, depriving him almost of the power of speaking, and totally of rest. This state was succeeded by the most violent epileptic fits I ever witnessed, requiring, with only short intervals, four men to hold him to several days and nights. These fits left him very exhausted and weak, and the respiration remained unimproved. He was in this state when I requested Dr. Malden to visit him, who gave it as his opinion that the peculiar dyspnoea had, in all probability, depended upon irritation of the cervical portion of the spinal chord, and that the supervention of the epilepsy might be accounted for upon the supposition of this irritation extending to the base of the encephalon. With these views, he recommended the whole back part of his head to be shaved, and covered with a large blister, discharge to be encouraged from it, and before the blister healed, a seton to be put in the back of his neck. These directions were strictly followed. From this time he had no return of epilepsy; the dyspnoea also gradually went, and he had no relapse, although he remained in the prison some months afterwards.

"As I did not take notes of this case from day to day, I have not been able to supply all the dates, but my memory in the narration of it has been assisted by reference to my weekly journal.

"This poor man laboured under the greatest depression of spirits, arising from his sentence of transportation for life, of which he always spoke in the most desponding manner to the other prisoners. This I suspect to be the remote cause of his attack, and not the exertion on the tread-wheel, from which I have never witnessed any bad effects. I find he had always enjoyed good health previous to his imprisonment, and had never had fits or any similar attack before."—*Midland Med. and Surg. Reporter*, for May, 1829.

#### OPHTHALMOLOGY.

12. *Musæ volitantes*.—M. NEUBER attributes musæ volitantes, to the presence of certain parasitic productions, analogous to the microscopic algi. He thinks that these anomalous productions have their seat in the aqueous humour, and in support of this opinion, he cites a case related by Rust, in which the musæ volitantes disappeared after the evacuation of the aqueous humour. The therapeutic indication would be to destroy the parasites or to separate them from the tissue where they have taken root. M. Neuber thinks that we may perhaps succeed in destroying them by the employment of the negative pile of a galvanic pile, but he adduces no fact in support of this conjecture.—*Bulletin des Sc. Medicales*, Sept. 1832.

13. *Observations on Cataract*. By Dr. FARKI, of Pesth.—Of 500 persons affected with cataract, in the principality of Siebenburgen, 268 were males, and 232 females. Of these 500, 14 were from 1 to 10 years of age.

"	16	"	11	20	"
"	18	"	21	30	"
"	18	"	31	40	"
"	51	"	41	50	"
"	102	"	51	60	"
"	112	"	61	70	"
"	109	over	70		

Dr. F. has operated upon 107 individuals, of whom 6 had both eyes operated upon. Of these operations, 7 were by keratonyxis, 2 by depression, and 100

by extraction. In all those upon whom the operation of keratonyxis was performed, the crystalline was soft; but absorption always took place; but when the pupil was dilated, some fragments of the crystalline were perceived, which impeded vision a little on the approach of night. In consequence of this, and not having met with any inconveniences from extraction, Dr. F. has abandoned this operation. The operations by depression were not attended by any success; in the first case, the crystalline remounted in part, and in the other closure of the pupil resulted. Of the 100 persons operated upon by extraction, there were but 94, the result of which is known to Dr. F. Of these 94 operations, of which 9 were performed on persons less than thirty-one years of age, there was no case of failure.

5	from 31 to 40 years,	1 failure.*
13	" 41 50 "	1 "
26	" 51 60 "	10 "
37	" 61 79 "	10 "
4 upwards of 71	"	1 "

Of these 23 failures, two presented after the removal of the crystalline, amaurotic amblyopia; in a third it was necessary to leave in the eye the opaque capsule of the crystalline. The want of success arose in 11 cases from iritis, produced by the operation, and in 8 cases from chemosis. The most unfortunate complication was that of arthritis. Among those operated upon, in whom inflammation had been destructive of the organ, 12 had been subject to arthritic affections, 1 had œdematous feet, 2 had a soft and flabby constitution, 1 had cancer of the nose, and 3 were free from all complication.—*Bull. des Sc. Med. Oct. 1831, and Journ. der Chirurgie und Augen Heilkunde, Band. XIV.*

14. *Exalted Sensibility of the Retina.*—In this affection, accompanied with lachrymation, and without visible inflammation of the globe, M. LISFRANC has found the greatest advantage from rubbing the extract of belladonna around the orbit of the eye.—*Gazette Medicale, March 17th, 1832.*

#### SURGERY.

15. *Chloruret of Lime and of Soda in the Treatment of Venereal and other Ulcers.*—Dr. MENÉ of Vaugirard, speaks very favourably of these remedies in the treatment of venereal ulcers of the prepuce, amygdala, and palate, &c. In one patient in whom the greater part of the glans had been destroyed by chancres, a cure was effected in eight days by repeated lotions with the chloride of lime. Dr. M. has derived equal advantage from these lotions in atonic ulcers, which resisted all other remedies employed to produce cicatrization. They were healed by washing them with the chloruret and afterwards covering them with compresses steeped in that liquid.—*Gaz. Med. Feb. 11th, 1832.*

16. *Excision of the Head of the Femur.*—Mr. WHITE of the Westminster hospital is said to have removed four inches of the femur in a very bad case of hip disease, which in all probability would have terminated fatally; the boy's health improved after the operation and a very useful joint was formed between the upper extremity of the femur and pelvis. The limb was not so much shorter than the other as might have been expected from the length of the removed portion of bone. The boy at the period of the operation is said to have been about fourteen; he lived eight years after, having the perfect use of the limb and then died of phthisis.

The whole pelvis, joint and upper part of the thigh were removed after death, and are deposited in the Museum of the College of Surgeons.—*Med. Gaz. March, 1832.*

17. *Ligature of the External Iliac in a recent wound of that Artery.*—There is no longer any novelty in the application of a ligature to the external iliac for the cure of aneurism, that measure having now been had recourse to in upwards of forty cases. In wounds of that artery the patient usually dies from hæmorrhage before surgical assistance can be obtained. M. VELPEAU surgeon of La Pitié, has however, recently been so fortunate as to arrive in season to a person who had wounded the artery in question with a knife, to apply a ligature to it. It was attended with complete success. The case is recorded in the *Gazette Médicale* for the 4th of February last.

18. *Wound of the Carotid Artery, followed by Aneurism, and cured by Ligature.*—An instance of this, is related in the *London Medical Gazette* for April last, by E. F. DEHANE, Esq. The patient was a delicate girl, ten years of age, who, in going down stairs with a dish in her hand, slipped, and in her fall, broke the dish, a sharp point of which punctured the neck. On Mr. Dehane's arrival a few minutes after the accident, he found the patient bleeding profusely from a wound, large enough to admit the end of the finger, about an inch above the clavicle, and in the course of the carotid artery. About two pounds of blood had been already lost, the patient's lips were pallid, her skin cold and clammy, and the pulse at the wrist not to be felt. Being doubtful whether the patient would revive, Mr. D. immediately applied a compress of lint over the wound, and caused it to be retained there by pressure, and in the meantime prepared ligatures, &c. to secure the bleeding vessel; but was surprised, upon its removal, to find that there was no hæmorrhage, notwithstanding she had very much revived from the state of syncope she had fallen into. He, however, waited some time, under the expectation of its renewal, but which did not follow, owing, probably to the obliquity of the puncture. He therefore secured the compress, and, having placed the patient in bed, left her. The fifth day afterwards when the compress was removed, the external wound had healed, but there was a small pulsating tumour a little above the puncture. He desired the child to be kept quiet, and continued the pressure both upon and below the tumour, as tight as it could be borne; it, notwithstanding, gradually increased, but not so much as to be very perceptible till the night of the 19th, when it suddenly became enlarged to the size of a walnut, pulsating under the sterno-cleido mastoideus muscle, and extending beyond it, and evidently in the line of the carotid, upon pressing which all pulsation in the tumour ceased. At his visit on the following morning, he proposed to take up the vessel, which was immediately assented to by the parents.

The operation was performed January 20th, in the following manner. The patient being placed on her back, with her head inclining over the left shoulder, Mr. H. commenced an incision from the base of the tumour, following the course of the sterno-mastoideus muscle along its inner edge down to the clavicle. More difficulty was experienced in getting at the vessel than had been anticipated, the space between the base of the aneurism and bone not exceeding one inch, which small space was crossed by the thyroid veins, and moreover the depth of the cellular membrane was considerable, so that he could barely feel the vessel with the point of his finger by forcibly pushing back the sterno-mastoideus muscle. Mr. H. therefore found it necessary to extend the incision in a direction upwards and backwards, somewhat above the tumour; by doing which, he was at length enabled to get a sufficient space to pass his ligature round the vessel. This, however, he was unable to effect with the common aneurismal needle, but succeeded with an eyed-probe, which he bent to an acute angle and passed under the artery, armed with a single silk ligature; this being drawn tight, all pulsation stopped in the tumour. The operation was thus concluded without any further loss of blood than the trifling quantity which followed the first incision. The ligature came away on the 31st of January, and before the middle of February the wound had quite healed, and the aneurismal tumour was scarcely perceptible.



## CHOLERA.

19. *Cholérine and its Treatment.*—Since the appearance of the cholera morbus among us, it has been conclusively demonstrated, that the disease is produced by an epidemic influence; that is to say, that it has not been imported from abroad, and that it has not arisen spontaneously without having been preceded by successive modifications of the economy. These truths are too generally admitted to require additional demonstration. Let it be borne in mind, that for more than six months past, a large proportion of the population of Paris and France have experienced derangements of the digestive functions, which were necessarily the prelude of the epidemic. These disorders did not affect the whole population, any more than cholera attacked every individual. There were only certain constitutions, those which now compose the class of cholera patients, who were attacked with them. By the changes in the weather, and by the progress of the epidemic constitution, those individuals who were most susceptible of its influence, were finally subjected to its full effects, and were attacked with cholera. Others, as those who had not hitherto experienced any predisposition, finally underwent the first degree of it, and they also were attacked with the first grade of the disease it occasions. The first degree we shall term *cholérine*, as this epithet has already been employed to designate the same affection at an epoch when it was wished to distinguish the preludes of cholera from cholera itself. *Cholérine* is then the diminutive of cholera, as respects cause, symptoms, and course; and it ought to be considered in the same light as regards its treatment. We will successively give the different points of this question.

It is certain, that since the invasion of the epidemic, that seven-eighths of the population of Paris have presented symptoms belonging to the same affection. Setting aside the effects of the moral commotion which every one must experience on the appearance of the cholera morbus, effects which we shall hereafter notice, it is impossible to avoid recognising, that almost all the inhabitants of the capital, to whatever class they might belong, have for a fortnight past presented the symptoms of an identical disease, modified only in its grades and its secondary appearances. Some lost their appetite, experienced uneasiness after having eaten, have borborygmi during digestion, and especially at night. As yet there is no colic, but there is a sensation of uneasiness, torpor, and intestinal fulness, which ordinarily announce a greater degree of disorder. To these first symptoms of gastric embarrassment are added others, which belong to the functions of innervation. The mind is less excited, less active, at the same time that the muscular strength is weakened, the intellectual faculties lose their energy. In other individuals, the disorder of the functions is much greater. Efforts to vomit, borborygmi, accompanied with colics, spontaneous sweats, greater lassitude, sudden sinking, and finally diarrhoea manifest themselves. This second stage may merely last for a short time, in which case it only constitutes a slight indisposition, which is dissipated of itself, or by the aid of medicine. If it continues, one, two, or many days, it becomes a real disease, which appears to us should attract the more attention, since it is often followed by cholera itself, or may be restricted to its own limits. It is to the complete development of this disease that we give the name of *cholérine*. In this grade, *cholérine* principally affects feeble and broken-down constitutions, those who are worn out by excesses or fatigue, by age or chronic disease. It is rare, that cholera does not ensue in individuals who present these conditions. An observation of more than six hundred patients has proved to us that nearly nine-tenths of the cholera patients taken to the hospitals, had experienced all the symptoms of *cholérine* before they were seized with cholera. Some complained for four or five days previous of diarrhoea, weakness, and spontaneous sweats; others had nausea, and some vomiting; some even presented, though in a slight degree, the first symptoms of intense cholera, as cramps, coldness of the extre-

mities and body, pains in the stomach and intestines; so that it was impossible not to recognise in this assemblage of symptoms, the first product of the general cause, which finally produces cholera morbus. If this be true, it may be conceived of what importance it must be, that every one should prevent cholera, if it has not occurred, and arrest its progress, if it has taken place.

When there is as yet only uneasiness, without a marked disorder of the functions, it is sufficient to strictly observe hygienic rules, to eat much less at a time, and not to eat until the preceding meal is perfectly digested, to restrict ourselves to some light gruel, if there be not a marked sensation of hunger. This precept is more important than is supposed. Numbers of persons have been seized with colics, diarrhoea, and vomiting, in consequence of having eaten at an improper time, or taken more food than the wants of the system required. When the flatulence and colics last, all solid food should be abstained from, and the utmost care taken to prevent a sudden chill. In the evening before going to bed, a warm infusion of tea or chamomile should be taken, sweetened with a spoonful or two of the syrup of white poppies, and perspiration induced by warm coverings. If the colics still increase, and are followed by some stools, recourse may be advantageously had to one or two doses of Dover's powder, of about five or six grains each, and weak rice water used as drink. To the preceding should be added, tepid and almost cold baths if practicable. These baths are especially suited for irritable individuals, in whom the influence of fear has become combined with the epidemic influence. In this respect, some distinction should be made between gastric symptoms produced by the reigning constitution alone, and those which might appear to be owing to violent and continual emotions of mind. In the first case, there is but little or no irritation properly speaking. The mouth is clammy but a little warm. The patient experiences a sensation of fulness and weight in the stomach, which may increase to pain, but this latter is neither burning nor is it accompanied with great thirst, burning and dryness of the throat, twitching and spasmodic contraction of the stomach, such as takes place when a continued mental reaction is superadded to the gastric disease. In this second case the symptoms rather assume the character of the cause which has induced them. The difference which is but of little importance where the symptoms are slightly marked, becomes of more consequence where they have acquired some intensity. Cholera exclusively depending on the epidemic constitution, requires, when it has reached its greatest degree of development, curative means which are almost wholly different from those which are proper for diarrhoea arising from the first cause, we will enter on a few details on this point.

When the epidemic diarrhoea has already existed for a day or two, and has resisted regimen, as slightly astringent drinks, or even when it has commenced with appearances of lasting for some time, as a furred tongue, desire to vomit, loss of appetite for several days, super-orbital cephalalgia, lassitude, and spontaneous sweats, recourse must immediately be had to ipecacuanha, which is to be administered in doses of twenty-five or thirty grains at two intervals of twenty-minutes. This evacuant has the marvellous property of suddenly checking the diarrhoea, and even the vomiting, if this exists. During the eight days that we have employed, and seen it employed by a number of practitioners, it has never failed of producing the happiest results. Recourse should even be had to it when the stomach is the seat of a fixed pain. The great point is to know the nature of the pain. When this is owing to an irritative concentration to the stomach, under the influence of the causes we have above enumerated, we should restrict ourselves to injections and emollient baths, to the detraction of blood from the anus, and the epigastric region, to which may be added small injections, with a few drops of laudanum. But, except in such a case, there should be no hesitation in immediately resorting to the emetic. This appears of such importance to us, that of ten cases of cholera which commenced with cholera, we think that one-half might have been prevented, if recourse had been had to this mode of treatment. This precaution, moreover, ought not to lead us to fear, that we may cause an attack of the cholera, as for some days



past a majority of the practitioners of the capital have given a preference to this method, as the first and principal agent in the treatment of cholera.

To conclude. Cholerine appears to us to be produced in its different grades by the more or less marked influence of the epidemic constitution. When left to itself it is susceptible of giving rise to cholera morbus, it is proper therefore to treat it as soon as possible. The means to be employed are, at first, warm drinks slightly opiated, and afterwards ipecacuanha. Some physicians add a mild purgative, as Seidlitz water, or calomel; we think, however, it is better to adhere to the ipecacuanha, and repeat the doses if it be necessary.—*Gazette Medicale de Paris, April 19th, 1832.*

20. *Treatment of Cholera by the Polish Physicians.*—Viewed in the light of a new and very peculiar disease, and being actually one of which cases had previously been of very rare occurrence in the northern countries of Europe, the Russian and Polish physicians appear to have been entirely at a loss, during the first eruption of the epidemic amongst them as to the proper course to be pursued in its treatment—one remedy after another appears to have been tried and quickly abandoned. By nearly all a tentative or merely empirical practice was pursued. The one which was most generally adopted, particularly in the Polish camp, was that of the East India surgeons, viz. the external application of stimulants, bleeding from the arm, with opium and calomel internally. The result of this plan of treatment was not, at least among the soldiers, such as to recommend it very highly. From the 23d of April to the 31st of May, 2634 of the military were attacked, of whom 776 or 29.5 per cent. recovered, and 1202 or 45.6 died—leaving 656 under care at the last mentioned date. During the first thirteen days, there was no case of recovery reported. It must be recollected, however, that not only were the great mass of the soldiers, composing the Polish army, precisely of that description of persons in whom the disease proves rapidly fatal—but they were exposed to very great fatigue and privations of every description, while during the first appearance of the epidemic amongst them, the camp was unprovided with surgeons, and consequently many of the patients must have died from the want of medical aid. The largest number of deaths took place during the first twenty-four days, the smallest number subsequently to the 15th of May.

By Dr. Sturm, of the camp near Kamienka, warm water appears to have been the remedy chiefly employed. He gave the patients every fifteen or thirty minutes a glass of water as warm as it could be swallowed—he declares that after fourteen glasses, at the furthest, had been taken, the disease was so far removed, that the patient complained only of a slight diarrhœa. The good effects of the warm water were, we are told, so promptly shown, that in two hours or even sooner, a cure was often effected, particularly when it was drunk with sufficient freedom.

In desperate cases the liquid caustic ammonia was given internally, and applied in the form of frictions over the epigastrium, particularly when the cramp was peculiarly severe. This practice does not appear to be very highly recommended, when the doctor informs us that he has seen it in four cases “restore the patients so that other medicines could be employed.” The dose of the ammonia internally was fifteen drops.

Dr. Sturm remarks, that the operation of calomel and opium, though he had found it beneficial, and at first depended chiefly upon it, was not to be compared in the rapidity of its effects to the hot water, and accordingly, Dr. S. soon entirely laid aside the former. Blood-letting Dr. S. found to be in the highest degree beneficial in every case in which a flow of blood could be obtained.

Dr. Camillo, surgeon to the Kron-Garde barracks, is said to have been peculiarly successful, losing but few of his patients.

He gave either an infusion of chamomile,  $\mathfrak{z}$ vj. with tinct. asafœtid. and sulphuric ether, of each  $\mathfrak{R}$ j.; or when there was severe and constant diarrhœa, a decoction of Colombo root,  $\mathfrak{z}$ vj. with asafœtida and ether as above. The above



quantities were those generally administered in the twenty-four hours. External frictions with stimulants, and sinapisms, were employed at the same time. A more extensive experience with this plan of treatment does not appear to have confirmed the praises with which it was at first announced.

Of 102 patients treated in barracks, from the 9th of May to the 7th of June, 62 died, or 60.8 per cent. and 20 recovered, or 19.6; remaining 20, of whom 14 were convalescent, increasing thus the proportion of cured to 33.3 per cent. Of the deaths, 36 were under, and 26 over fifty years of age. Of the recoveries, 27 were under, and 7 over that age. Of the cases which terminated fatally, 27 had been bled—15 previously to their entrance in the hospital, and of course at an early stage of the attack; 29 had moxa applied to the abdomen; 50 were treated with opium, either in the form of Dover's powders, or by itself—in 44 cases it was given combined with calomel. In 3 cases emetics were employed.

In all cases treated in garrison, warm baths, repeated twice or thrice a day, were employed. Of the 20 cases which terminated favourably, 8 were bled; 2 children had leeches applied to the abdomen; to 7 were moxas applied; 3 were treated with small doses of calomel and opium; 2 slight cases were cured by the warm bath and warm teas. To 23 individuals the oxyd of bismuth was administered, of these 7 died. In these 23 cases, however, other of the remedies already referred to were employed.

Hope's mixture of nitric acid and laudanum was pretty extensively employed by some of the Polish surgeons, but the slight manner in which it is noticed does not speak much in favour of its efficacy.

It is the general opinion of the Polish physicians, derived from the result of the cases treated in the general hospitals, that large doses of opium, or small doses repeated at short intervals, produced a decidedly injurious effect—paralyzing the stomach, or by their effects upon the brain, hurrying on the stage of collapse.

21. *Treatment of Cholera at Dünaburg.*—Dr. EWERTZ, in his account of the cholera as it appeared epidemically in Dünaburg, states, that from the first appearance of the disease on the 9th of June, 1831, up to the 7th of July of the same year, out of a population of five thousand, seven hundred and forty-five were attacked, of whom only seventy-five died. Two-thirds of the latter were individuals who, from various causes, were not placed under any regular treatment until that period of the disease had gone by, when alone, according to Dr. E. there is certainty of a cure being effected. Nine-tenths of those attacked were of the lowest classes, and were treated at their own dwellings, or when attacked in the streets, were carried to the nearest house, and remedies applied without the least delay.

Our readers will no doubt be anxious to hear the plan of treatment that was generally pursued in those cases in which the patients recovered. The plan appears to us to be one well adapted to a large number of cases of cholera, and to be in general, if sufficiently early resorted to, better calculated to produce a favourable termination of the disease than can be expected from the profuse administration of calomel, opium, brandy and ether, so often resorted to by the East India physicians, and imitated by so many of the physicians on the continent of Europe.

It appears from the paper of Dr. E. that almost the only treatment pursued in Dünaburg was the following.

When an individual was attacked with cholera—when he experienced a giddiness, sunk exhausted, and his whole body, but particularly his extremities, became cold, and of a bluish colour, without loss of time the whole of the body was rubbed diligently with a liniment composed of nine parts of camphorated spirit and one of tincture of capsicum. The frictions were continued until the warmth of the skin was restored, and the patient became roused from the state of collapse into which he had fallen. In the meantime a vein was opened, and sixteen to twenty-four ounces of blood drawn off. When the state of collapse

had gone off, and the pulse beat freely at the wrists, he was directed to drink copiously of a warm infusion of mint or some other aromatic herb, and being warmly covered in bed, hot bricks wet with vinegar were applied to different parts of his body, beneath the bed-clothes, which were properly supported in order that the steam produced should be allowed to pass around him. A free perspiration was in this manner generally produced, the patient commonly fell asleep, and awoke free from disease.

When the attack commenced with a severe vomiting and purging, or with only the one or other, with a severe continued pain at the præcordia, great thirst, and cramps of the extremities, frictions with the spirit of camphor were not found to be so beneficial as the speedy production of perspiration by the means indicated above, the detraction of blood from the arm, and a blister over the epigastrium. In cases where the symptoms were less violent, a blister, sinapism, or even grated horse-radish to the epigastrium, was sufficient of itself to remove them. The patient at the same time taking from ten to twenty drops of the laud. liq. Sydenh. in a draught of mint or other tea. In very slight cases a tea-spoonful every hour of a powder composed of one part bicarbonas sodæ vel potassæ and two of cremor tart. was found very beneficial. In all cases injections of flaxseed tea with a few drops of laudanum were administered, and it is believed, with good effects.

Dr. Ewertz urges the great importance of losing no time before the foregoing treatment is had recourse to—and denounces all the restrictive measures that have been adopted in the different cities on the supposition that the disease is contagious, as in the highest degree injurious—as calculated to augment rather than to abate the violence of the disease, and by preventing that prompt assistance from being given to those attacked which the rapid progress of the disease so loudly calls for, increases to a very great extent its mortality.

22. *Summary of the Pathological Appearances observed in twenty dissections of Cholera Patients at Edinburgh.* By JONAS LIZARS, Esq.—*Brain.* This organ was examined in twelve subjects, and, in all, the arteries and veins of the integuments and muscles covering the cranium were distended with the dark blood, which, in some, flowed like tar.

In ten, the blood-vessels of the dura mater were turgid with this blood; and in three, there were fibrinous coagula.

In seven, there was serous effusion under the arachnoid membrane.

In four, the pia mater was congested with blood-vessels.

In seven, the cerebrum was highly vascular; and in one, slightly softened.

In seven, the cerebellum was very vascular; and in three, its substance was slightly softened.

*SPINE EXAMINED IN TEN.*—In six, serous effusion between the theca vertebralis and arachnoid membrane; and, in one of these, the fluid was bloody.

In two, serous effusion between arachnoid and pia-mater.

In six, blood-vessels of spinal chord highly injected with the dark blood; and one with evidence of inflammation between dorsal and lumbar regions.

In six, the spinal or rachidian veins turgid with dark blood.

*GANGLIONIC SYSTEM EXAMINED IN SEVENTEEN.*—In ten, the neurilema of pneumogastric nerves was injected with blood-vessels; in one, the nerve was enlarged; in another, it was thickened; and in a third, the neurilema was inflamed with ecchymosed patches.

In six, the neurilema of splanchnic nerves was vascular; in two, the ganglia at their origins were vividly injected; and one ganglion was ecchymosed.

In sixteen, one or both of the semilunar ganglia were vascular; in one, it was inflamed; in three, it was enlarged and infiltrated with blood or serum; and, in two, softened.

In eight, the solar plexus highly vascular throughout; in three, the ganglia and nerves enlarged, and one infiltrated.

In four, the renal plexus was very vascular.



In four, the œsophageal plexuses were vascular.

In one, the recurrent of the pneumogastric nerve was vascular.

In five, the cardiac plexus was enlarged, and very vascular.

**THORAX.—Heart.** In three, the heart was flabby and pale; in two, collapsed; and many of them had the left ventricle so contracted and firm, as to contain only a drachm of blood. In thirteen, the right side was full of the dark gory blood, part of which was generally in the state of a fibrinous coagulum.

In three, the left side was full of the same blood with coagula.

In three, the right auricle full of dark blood and coagula.

In six, the left auricle full of dark blood and coagula.

In four, left ventricle was moderately filled with blood and coagula, and one affected with softening; in two, coagulum extended into aorta.

In five, right ventricle full of blood and coagula. In one, coagulum extended into pulmonary artery. In two, the parietes were softened.

**Pericardium.**—In one, this sac was distended with gas; in two it was dry, like paper, and vascular; and, in a third, dry, vascular, and diaphanous. In four it was vascular. In all, the coronary vessels more or less injected with dark blood.

**Venæ Cavae.**—In all, more or less of the dark blood was found.

**Pulmonary Veins.**—In six, these veins were turgid with the dark blood.

**Lungs.**—In four, these organs were congested with the dark blood.

**Pulmonary Artery.**—In one, a large coagulum, which extended into its two large branches. In three, it was full of the dark blood, and in three others the vasa vasorum were highly injected.

**Pleura.**—In five, highly injected; and in two, there was effusion of lymph.

**Aorta.**—In all, it contained more or less dark blood, with fibrinous coagula; in six, the vasa vasorum were highly injected—the dark blood, and occasionally coagula, extended into the carotid, brachial, femoral, tibial, ulnar, and radial arteries.

**ABDOMEN.—Peritoneum.** In nine, this membrane was highly injected; in six, evidently inflamed; and in three, there was albuminous effusion, with some turbid serum. In one, the omentum was very vascular, and in another it was inflamed.

**Stomach.**—Generally of a white colour, both on its peritoneal and mucous tunics, and containing more or less of the rice-water fluid. In seven, there were distinct vascular patches on the mucous coat, with several ecchymosed spots, varying in size from that of a sixpence to that of a half-crown, and in all there was manifest softening. In one, the mucous tunic was eroded.

**Small Intestines.**—In twelve, there were evident marks of high inflammation, and vivid and extensive injection; in nine, ecchymosed patches; in four, mucous tunic softened in many points; and in one, incipient ulceration. Contents of a viscid white mucous, or greenish colour, and in two they were bloody.

**Large Intestines.**—Transverse arch and sigmoid flexure of colon, commonly spasmodically contracted. In five, vascularity, with ecchymosis. Two inflamed, with softening, and one with ulceration. Two with dark venous congestion, similar to intestine in strangulated hernia. Contents generally rice-watery, or gruelly and flocculent, occasionally greenish and viscid. In many the colon, with the exception of the caput cæcum, was empty.

**Liver.**—Very various in colour; two with Bright's yellow deposit. In some the vena portæ were moderately congested, and in one the biliary ducts full of bile.

**Gall-bladder.**—Generally two-thirds full of rather inspissated olive-green bile. In the twenty cases ten were full of this fluid; the others varied from a little bile to two-thirds.

**Pancreas.**—Generally healthy.

**Kidneys.**—Commonly healthy, but varying like the liver, according to the habits of the individuals. Three were slightly congested, one gorged with the dark blood, and another presented a livid appearance.

**Urinary Bladder.**—In all contracted, and almost empty. When any fluid was



present, it was about a drachm of muco-purulent. One however was contracted horizontally, and contained five ounces of limpid urine.

23. *Cholera at Paris.*—The cholera is usually represented as having broken out unexpected and suddenly at Paris on the 26th of April last. This is not altogether correct. "Of those physicians," says the editor of the *Gazette Médicale*, "who unprejudicedly observed the development of the reigning constitution, there is not one who did not foresee and almost determine the precise period of the appearance of the cholera. It is especially permitted for us to say so, since, in June last, we pointed out the prevailing constitution as one of the forerunners of the epidemic. This disease was regarded by us as a necessary and inevitable consequence of the elements which we indicated. We will go further; we have had in our possession for at least three months accounts of several unquestionable cases of cholera, occurring under the observation of men of education and of unimpeachable veracity; but the fear of alarming a population already exceedingly uneasy, induced us to preserve silence until the disease has become more completely developed. This development it has attained with great rapidity. Since Monday, March 26th, the period at which the first well-attested cases are said to have occurred, the disease has been going on increasing by tenfold."

Between the 26th of March and the 20th of April, 10,476 persons died in Paris of cholera; and it is said that upwards of 30,000 persons were affected with the disease, not including those who suffered from slight symptoms, evidently depending upon the epidemic constitution; as diarrhœa, borborygmi, cramps of the stomach, pains in the legs, followed by debility, &c.

The disease first appeared in the most crowded and filthy part of Paris, though eventually few or no parts of the city appear to have escaped its ravages, and its earliest and most numerous victims were the wretched inhabitants of narrow, filthy alleys, worn down by misery, debauchery, and privations of every description.

The following summary of the symptoms and treatment of the disease, which we translate from the *Archives Générales* for May last, is said to be the result of the examination of 6,094 patients admitted into the various hospitals of Paris between the 1st and 18th of April. Of the number just mentioned, 3,673 died; 1,594 were discharged cured or perfectly convalescent, and 837 remained under treatment.

"**SYMPTOMS. First stage.**—The individual, if at the time in good health, is seized with diarrhœa; this occurs in some instances very suddenly, the discharges being copious; in other cases the diarrhœa creeps on slowly. There is little griping, and no tenesmus. Soon after the liquid discharges from the bowels take place, a sense of weakness is experienced in the lower extremities, which is sometimes scarcely apparent, while at others it is so great that the patient cannot account for the feeling of exhaustion, so inexplicable by the symptoms under which he labours. Syncope is threatened on every movement of the body. In some cases there is an intense pain of the forehead, the peculiar character of which, the head appearing as it were constricted, and which causes to the patient great inquietude. By degrees anorexia comes on; nevertheless, in many cases, the individual is yet capable of following his customary occupations—frequently, also, the above symptoms, in persons of an energetic or careless disposition, attract little attention, and this leading to a false security, causes serious injury to the patients. This first stage of the disease continues one or two days, and, frequently longer, extending sometimes beyond a week, and causing the utmost debility. It is very generally present, and is easily treated.

"**Second stage.**—This is marked by cramps in the limbs and vomiting. The stomach discharges, first the food contained in it, bilious matters are then thrown up, afterwards those of a serous character, which become mixed with whitish flocculi, giving to the discharges the appearances of rice water, or of gruel. The discharges per anum present similar appearances—at first solid,

they quickly become fluid, bilious, serous, and finally are composed entirely of a sero-mucous liquid of a whitish colour. So similar are the stools in appearance to the discharges from the stomach, that it is impossible, at first sight, to distinguish one from the other. They have always a peculiar smell, which is acid, but at the same time sickening, and readily recognised when once perceived. It has some analogy to that of the vapour of iodine, or of chlorine. The sweat of the patient seems to present the same odour, and which in the absence of other symptoms, is sufficient of itself to establish the diagnostic. The discharges from the stomach are more or less constant and abundant. To these succeed cramps, affecting successively the feet, hands, legs, and arms—they invade even the trunk, simulating pleurodynia, partial peritonitis, and more frequently lumbago. The more violent and general they become, the greater is the danger of the patient—the exceptions to this statement are extremely few. The pulse increases in frequency, being from one hundred and twenty to one hundred and thirty in the minute; the extremities become cold, and the arteries lose their normal tension—the blood which flows through them scarcely distending their parietes. The secretions are suppressed, or at least they are suspended; the respiration is laborious, sometimes more frequent and at others slower; but there is constantly a sensation of suffocation, produced by the constriction of the base of the thorax. The patient is restless, agitated, frequently prognosticating his speedy dissolution. The intellectual functions are unimpaired. The features of the face become sharpened, their ordinary expression is entirely destroyed; the eyes are bright, and the tongue pasty.

*“Third stage.*—This is the stage to which the term *blue* has been applied, from the circumstance of the face and extremities assuming a bluish venous and very peculiar tint. To the phenomena of the preceding period, succeed now an extreme exhaustion; the skin becomes of a violet hue, the pulse extremely weak, frequently even entirely ceasing in the radial arteries. The respiration is deep and interrupted; the breath is cold, and has the peculiar odour already alluded to. The voice which had exhibited some degree of alteration during the preceding stage, becomes now extremely feeble, frequently inaudible. The intellectual faculties still remain, nevertheless the patient exhibits a carelessness or an apathy almost complete. The force and frequency of the cramps diminish; the evacuations from the stomach and bowels are less frequently repeated; the skin is bathed with a clammy sweat, and completely cold; the tongue itself is cold; the eyes half opened, present a bluish colour, an ecchymosis as it were of the inferior part of the cornea and conjunctiva; the pupil becomes dilated; the nose contracted; the face assumes a cadaveric appearance, and the limbs become stiff like those of a corpse. The skin is dry, and no longer presents its usual elasticity, so that a fold made in the skin of the neck or chest, remains permanent. During this period the patient dies without convulsions, or any apparent pain, and more frequently without the knowledge of those who surround him, so insensible is the transition from life to death, and so strongly does the living patient resemble the corpse.

*“Fourth stage.*—Reaction sometimes occurs spontaneously, as we are informed by physicians who have seen it in patients left entirely without medical aid. To produce reaction should be the aim of the practitioner, for it indicates a tendency to a favourable termination. The pulse gains an increase of strength, and reappears in the extremities; the coldness of the surface is diminished; the skin loses its violet hue; the conjunctiva become injected; the voice becomes more sonorous; the tongue and breath acquire their usual warmth; the respiration is more frequent and easy. A hicough sometimes occurs, as though the diaphragm, in resuming its functions, experienced a difficulty in their proper execution. There is no longer either diarrhoea, vomiting, or cramp. Frequently also, as the circulation becomes more free and vigorous, congestions of the brain take place; the head becomes red, and the patient may then sink rapidly. In other cases the degree of reaction is of a more natural character, and the recovery of the patient is speedily accomplished.



"Such is the general progress of the cholera morbus, as it presented itself in Paris. Many varieties, however, were observed in its phenomena, referable to the particular condition of the patient's system. Thus, in children, females, and very irritable persons, a form of cholera was observed in which the nervous symptoms predominated; the cramps were attended with true convulsions; symptoms were even observed which simulated tetanus; during the paroxysms of which the patient expired. In plethoric subjects, with large and robust bodies, the inflammatory form of the disease manifested itself more frequently; the tongue was red and irritated; the epigastrium was the seat of acute pain; there was violent fever; very copious vomiting, insatiable thirst, and other symptoms demanding evidently an antiphlogistic treatment. In other instances the asphyxial type predominated—the blueness of the skin occurred from nearly the commencement of the attack, and the death of the patient took place often very promptly.

"**TREATMENT.**—Notwithstanding all that has been said upon the existence in cholera of a gastro-enteritis or gastro-cephalitis, it is certain that in many cases, even of the most violent character, not the least morbid appearance is discoverable throughout the whole digestive tube. Sometimes we find in the small intestine, a number of either isolated and tolerably prominent follicles or of cellulated patches, having the same appearance as those found at a certain stage of ordinary typhoid affections. In some cases, but more rarely, we find traces of gangrene in the mucous membrane, or black spots which exhale a decidedly gangrenous smell. MM. Renauldin, Martin Solon, Andral and Louis, have met with these morbid appearances in several instances. They are nevertheless exceptions, and cannot serve as a basis, upon which to found a correct idea of the etiology of the disease. What seems more evident, is the alteration of the blood. The proportion of free carbon being double, and that of the colouring quadruple, to what they are in a state of health. The aqueous, albuminous, and fibrinous portions of the blood are almost entirely wanting—in consequence of which it assumes the pitchy consistency so frequently mentioned. If this, which is evidently the essential morbid change, be made the basis of the etiology of the disease, and consequently of its treatment, it may be demanded what relation does there exist between the affection to be removed, and the remedies employed to that end?

"In the first period, when the digestive tube appears to be the principal point of fluxion, it is all important to oppose this congestion. Of course, local bleeding and soothing injections are indicated. Some practitioners have employed other means; they have given ipecacuanha, and produced, in this manner, a sudden impression upon the whole intestinal tube. This shock has been salutary in a great number of cases; but it should not be concealed, that in other instances, it has appeared to have had an injurious effect.

"In the second period, the internal congestion is more extensive; it already impedes the play of many of the functions, and the necessity of directing our efforts to its removal increases rapidly. We may yet bleed if the pulse continues, and the patient is robust. Antispasmodics and hypnotic remedies, capable of arresting the progress of the nervous affection, which is now added to the first symptoms should likewise be administered. Iced drinks, even ice itself, are a very excellent means for arresting the vomiting. Injections, decidedly astringent, will succeed also in arresting the diarrhoea and preventing that exhaustion which so rapidly follows the discharges from the stomach and bowels. The administration of ipecacuanha even in this stage of the disease, has appeared to be attended with good effects, in bringing back the natural secretions to take the place of those produced by the morbid stimulus.\* Under the effects of an emetic of this substance, the bile has been known to be copiously discharged; the white matter of the dejections to be diminished, and shortly to disappear; the bladder to become filled with urine, and the cramps to cease.

"With respect to the third period, a new order of phenomena predominate.



The coldness of the extremities, the feebleness of the respiration, the diminished action of the heart, all indicate a complete perversion of the functions of the organs. Even supposing, that during the two first stages of the disease, some portions of the mucous membrane of the digestive tube should become the seat of a slight phlogosis, it does not follow, that this should demand the entire attention of the practitioner, now when life itself is on the point of ceasing, and the actions of all the principal organs arrested. Under such circumstances, the subtraction of a small quantity of blood, is to say the least, useless; the impulsive power of the heart being almost destroyed, and the quantity of the circulating fluids greatly diminished. Our efforts should, therefore, be directed, to the organs which are still capable of feeling the influence of the impressions we desire to make upon them—the stomach, in this case, is one of the points the most accessible to our remedies. The most diffusible stimulants, as ether, ammonia, &c. will now be found to produce salutary effects, and give to the patient some chance of recovery. Even at this period vomits have been administered, and the spinal marrow has also been strongly stimulated. These two means have had the effect of rousing the nervous influence on the point of disappearing—of calling back the powers of life, and of producing reaction. It will readily be perceived that a crowd of analogous measures are all equally calculated to produce these important results. We must say, however, that in this stage the chances of success are but trifling.

“Reaction once obtained, we have to watch its progress and obviate any morbid effects it may occasion when not maintained within due limits. The convalescence from cholera is long, and painful. It requires a constant watchfulness on the part of the practitioner, and the utmost docility on the part of the patient. It is unhappily too true, that a great number of patients recovered from an attack of cholera, but too soon abandoned to themselves, have from the errors in regimen they have committed, been suddenly destroyed. The extreme debility which succeeds to the enormous discharges that take place in this singular disease, predisposes to serious organic affections—the most trifling pneumonia will in an instant become mortal—the slightest irritation of the stomach, will be at once accompanied with all the symptoms which characterize the typhoid diseases, and the patients sink, the more quickly as the plan of treatment proper in the latter affections cannot be put in practice in persons so completely exhausted.”

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24. *Injection of Saline Solutions into the Veins.*—The following letter of Dr. LARRA, of Leith, to the Secretary of the Central Board of Health, furnishes us with an account of the employment of this remedy for the cure of cholera. The measure has been resorted to in New York and in Philadelphia, but the results are far from realizing the anticipations of Dr. L.

Sir,—My friend, Dr. Lewins, has communicated to me your wish for a detailed account of my method of treating cholera by saline injection into the veins, with which I now most willingly comply. My scope for observation, since I commenced this treatment, has been too limited to allow me to be very copious on the subject, but I think I can adduce sufficient proof to the unprejudiced, not only of its safety, but of its unquestionable utility. I have never yet seen one bad symptom attributable to it, and I have no doubt that it will be found, when judiciously applied, to be one of the most powerful, and one of the safest remedies yet used in the second stage of cholera, or that hopeless state of collapse to which the system is reduced.

Before entering into particulars, I beg leave to premise, that the plan which I have put in practice was suggested to me on reading in *THE LANCET*, the review of Dr. O'Shaughnessy's report on the chemical pathology of malignant cholera, by which it appears that in that disease there is a very great deficiency both of the water and saline matter of the blood. On which deficiency, the thick, black, cold state of the vital fluid depends, which evidently produces

most of the distressing symptoms of that very fearful complaint, and is, doubtless, often the cause of death. In this opinion I am abundantly borne out by the phenomena produced on repletion by venous injection.

So soon as I learnt the result of Dr. O'Shaughnessy's analysis, I attempted to restore the blood to its natural state, by injecting copiously into the larger intestines warm water, holding in solution the requisite salts, and also administered quantities from time to time by the mouth, trusting that the power of absorption might not be altogether lost; but by these means I produced, in no case, any permanent benefit; but, on the contrary, I thought the tormina, vomiting, and purging, were much aggravated thereby, to the further reduction of the little remaining strength of the patient; finding thus, that such, in common with all the ordinary means in use, was either useless or hurtful, I at length resolved to throw the fluid immediately into the circulation. In this, having no precedent to direct me, I proceeded with much caution. The first subject of experiment was an aged female, on whom all the usual remedies had been fully tried, without producing one good symptom; the disease, uninterrupted, holding steadily on its course. She had apparently reached the last moments of her earthly existence, and now nothing could injure her—indeed, so entirely was she reduced, that I feared I should be unable to get my apparatus ready ere she expired. Having inserted a tube into the basilic vein, cautiously—anxiously I watched the effects; ounce after ounce was injected, but no visible change was produced. Still persevering, I thought she began to breathe less laboriously; soon the sharpened features, and sunken eye, and fallen jaw, pale and cold, bearing the manifest impress of death's signet, began to glow with returning animation; the pulse, which had long ceased, returned to the wrist; at first small and quick, by degrees it became more and more distinct, fuller, slower, and firmer, and in the short space of half an hour, when six pints had been injected, she expressed in a firm voice that she was free from all uneasiness, actually became jocular, and fancied all she needed was a little sleep; her extremities were warm, and every feature bore the aspect of comfort and health. This being my first case, I fancied my patient secure, and from my great need of a little repose, left her in charge of the hospital surgeon; but I had not been long gone, ere the vomiting and purging recurring, soon reduced her to her former state of debility. I was not apprised of the event, and she sunk in five and a half hours after I left her. As she had previously been of a sound constitution, I have no doubt the case would have issued in complete reaction, had the remedy, which had already produced such effect, been repeated.

Not having by me the number of *THE LANCET* containing Dr. O'Shaughnessy's analyses, I adopted that of Dr. Marcet, only allowing a smaller proportion of saline ingredients. This I now find to be considerably less than natural, according to the more recent analyses. I dissolved from two to three drachms of muriate of soda, and two scruples of the subcarbonate of soda in six pints of water, and injected it at temperature 112° Fah. If the temperature is so low as a hundred, it produces an extreme sense of cold, with rigors; and if it reaches 115°, it suddenly excites the heart, the countenance becomes flushed, and the patient complains of great weakness. At first there is but little felt by the patient, and symptoms continue unaltered, until the blood, mingled with the injected liquid, becomes warm and fluid; the improvement in the pulse and countenance is almost simultaneous; the cadaverous expression gradually gives place to appearances of returning animation, the horrid oppression at the præcordia goes off, the sunken turned up eye, half covered by the palpebre, becomes gradually fuller, till it sparkles with the brilliancy of health, the livid hue disappears, the warmth of the body returns, and it regains its natural colour—words are no more uttered in whispers, the voice first acquires its true cholera tone, and ultimately its wonted energy, and the poor patient, who but a few minutes before was oppressed with sickness, vomiting, and burning thirst, is suddenly relieved from every distressing symptom; blood now drawn exhibits on exposure to air its natural florid hue.



Such symptoms, so gratifying both to the sick and the physician, must never allow the latter to relax in his care—the utmost vigilance is still necessary. At first the change is so great, that he may fancy all is accomplished, and leave his post for a while. The diarrhœa recurring, he may find his patient, after the lapse of two or three hours, as low as ever. As soon as reaction by the first injection is produced, mild warm stimulants, such as weak gin toddy, mixed with some astringent, should be freely and assiduously administered. An attempt should be made to fill the colon with some astringent fluid. That such is requisite, is evident from the watery diarrhœa returning with violence, and if not restrained, death will ultimately make sure of his victim, therefore, so soon as the pulse fails, and the features again shrink, the venous injection must be repeated, taking care that the fluid in use retains its proper temperature. The injection should be carried on very slowly, unless the patient is much exhausted, when it may be used more rapidly at first, until a little excitement is produced, after which it should not exceed two or three ounces per minute, and now is the time for the exhibition of astringents by the mouth, which will be retained; for in general the sickness entirely leaves during the operation.

Such remedies must be persisted in; and repeated as symptoms demand, or until reaction is permanently established. I have witnessed no violent symptoms accompanying the rapid injection of the fluid; but I have thought that the hasty repletion of the system was followed by great increase of the evacuations, and, consequently, a more sudden depression of the powers of life. The quantity to be injected depends on the effect produced, and the repetition on the demands of the system, which generally vary according to the violence of the diarrhœa; the greater the degree of collapse, the greater will be the quantity needed, though not uniformly, for a very slight loss produces much depression in some systems; hence there is often great collapse, without much vomiting, purging, or cutaneous discharge.

Although in every case, even the most desperate, the cholera symptoms were removed, some of my cases failed, which I attributed to one or other of the following causes—either the quantity injected was too small, or its effects were rendered abortive by extensive organic disease, or its application was too late.

I have already given an instance where deficiency in quantity was the cause of failure, which I will now contrast with one in which it was used freely. A female, aged fifty, very destitute, but previously in good health, was on the 13th instant, at four A. M., seized with cholera in its most violent form, and by half-past nine was reduced to a most hopeless state. The pulse was quite gone, even in the axilla, and strength so much exhausted, that I had resolved not to try the effects of the injection, conceiving the poor woman's case to be hopeless, and that the failure of the experiment might afford the prejudiced and the illiberal an opportunity to stigmatize the practice; however, I at length thought I would give her a chance, and in the presence of Drs. Lewins and Craigie, and Messrs. Sibson and Paterson, I injected one hundred and twenty ounces, when, like the effects of magic, instead of the pallid aspect of one whom death had scaled as his own, the vital tide was restored, and life and vivacity returned; but diarrhœa recurred, and in three hours she again sunk. One hundred and twenty ounces more were injected with the same good effect. In this case three hundred and thirty ounces were so used in twelve hours, when reaction was completely reëstablished; and in forty-eight hours she smoked her pipe free from distemper. She was then, for better accommodation, carried to the hospital, where probably, from contagion, slight typhoid symptoms were produced. She is now, however, convalescent.

The second cause of want of success is the presence of organic disease; this, probably, renders the possessor very liable to attacks of cholera; and the latept evil, which previously gave but little uneasiness, suffers aggravation in all its symptoms, more especially after reaction has been produced, and has evidently, in many cases, been the cause of death. A delicate young female, of strumous habits, who had been for some years subject to pectoral complaints, was rescued



from a state of collapse by the injection of sixty ounces of the saline fluid, administered in separate portions, within the space of twelve hours. After lingering for ten days she died; the heart was found in a state of atrophy, covered with strong evidence of the existence of ancient disease, and floating in eight ounces of pus. In another case every internal organ was diseased; some of them so much so, that it was astonishing the individual lived so long.

The third case of the occasional want of success, is the late application of the remedy. Hitherto I have had opportunity of injecting only in extreme cases, after every other means had entirely failed, cases which apparently soon would have proved fatal. Here the obstacles to be overcome have been of no ordinary kind, notwithstanding the result of the practice is of the most encouraging nature, and the number of cases now convalescent or doing well highly gratifying. In every fatal case we have had an opportunity of examining, independent of organic disease, I have found a large quantity of fibrine in the cavities of the heart, especially on the right side, where it had extended from the auricle through the ventricle in the pulmonary artery. Such deposition must have formed a certain obstacle to recovery, and is, no doubt, from the interruption it gives to the pulmonary circulation, the cause of the heavings of the chest, and the inordinate action perceptible in the centre of circulation many hours before death. Now surely it is reasonable to suppose, that if this, the most simple of all remedies, were applied early, before the blood drained of its water has collected in the larger vessels, in fact before such fibrinous depositions have taken place in the cavities of the heart, is it not reasonable to suppose that such would be entirely prevented?

But not only is early injection advisable on this account, not only is stagnation of the blood prevented by it, and the laborious breathing, and the præcordial oppression, the intense sickness, the burning thirst, the extreme depression of the vital powers, and the chances of aggravating chronic disease, or of producing new organic lesion, in a great measure avoided: but it is rational to suppose that the consecutive fever will be rendered much milder, and that this is the case, is supported by my own experience, even though the remedy has not been applied earlier, indeed the fact is very evident. In an ordinary attack of cholera, much fluid is lost; and if the individual is so fortunate as to get out of the stage of collapse, if consecutive fever of typhoid type comes on, the system, left to its own resources to replace the lost serum, must be but ill fitted for the task, for the debility is extreme, absorption goes on slowly, the fever will be much aggravated by the irritation of internal congestion; local inflammation will thereby be produced, and the chance of recovery will be but small. Much of this evil is to be mitigated or entirely avoided by injection into the veins, of which circumstance I can adduce living instances; and where the patient, who had been injected, has sunk under organic disease, the usual marks of congestion are not perceptible.

The apparatus I have used, is Reid's patent syringe, having a small silver tube attached to the extremity of the flexible injecting tube. The syringe must be quite perfect, so as to avoid the risk of injecting air; the saline fluid should never be injected oftener than *once* into the same orifice, and the vein should be treated with much delicacy to avoid phlebitis. The wound should be poulticed and carefully watched, if it does not heal by the first intention.

I am, sir, your most obedient servant,

THOMAS LATTA, M. D.

Leith, May 23d, 1832. \*

25. *MAGENDIE'S Treatment of Cholera.*—M. Magendie's success in the treatment of cholera has been vaunted in many of the journals. His plan of treatment consists in the administration during the cold stage of the following:—

1st. For common drink—℞. Infus. chamæmil. ℥iv.; acet. ammon. ℥ij.; sacch. alb. ℥j. M.

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2d. Half a glass every hour of the following punch—℞. Infus. flor. Tiliæ Europææ, ℥iv.; limon. iv.; alcohol, ℥vj.; sacch. alb. ℥vj. M.

3d. From time to time he gives half a glass of the following—℞. Vinum ca-lefac. ℥ij.; tinct. cannell. ℥ij.; sacch. alb. ℥xij. M.

By these stimulants, reaction was sometimes induced, and it was at once concluded that the patient was cured. But violent reaction is not less dangerous than collapse, and M. Magendie's patients relieved from the latter condition by internal stimulants, soon exhibited evidences of congestion of the brain or digestive organs, which resisted, for the most part, general and local bleeding, cold to the head, and the most active revulsives to the feet. The patient became delirious, coma supervened, and death closed the scene.

It is shown by authentic documents in our possession, that the result of M. Magendie's treatment was not less unfortunate than that of his colleagues; he lost more than one-half of his patients.

A careful examination of the results of the various modes of treatment adopted in India, Russia, Poland, Germany, Great Britain and France, has satisfied us that the internal administration of powerful stimulants in large doses, in the collapsed stage of cholera, has been eminently injurious, and such appears to have been ultimately the conviction of nearly all the practitioners who resorted to them. Panic struck, with the utter state of prostration of patients in the collapse of cholera, physicians appear every where to have at first been led to administer the most powerful stimulants in large and repeated doses, to rouse the action of the heart. Recovered from their first surprise, and admonished by their ill success, and by the violent and uncontrollable reaction sometimes induced, these remedies were subsequently abandoned, or only applied externally, and with incomparably better results.

26. *M. Petit's Treatment of Cholera.*—The principal indication which M. Petit, one of the physicians of the Hôtel-Dieu de Paris, proposes to himself to fulfil, in the treatment of cholera, is to keep up a constant impression upon the spinal marrow, and to change the phenomena of innervation. To effect this, he places over the whole length of the spine a strip of flannel, wet with a liniment composed of an ounce of the essence of turpentine and a drachm of aqua ammonia, and passes slowly over it a very hot flat-iron. An instantaneous evaporation of a great part of the liniment results, which acts powerfully on the skin over the spine, and induces very speedily vesication. The heat returns to the skin, the cramps and vomitings disappear, the circulation is reëstablished, and the patient feels much better. The effects of this remedy are assisted by hot bricks to the limbs; by frictions to the body with a decoction of mustard, to which some aq. ammonia is added, and the patient is also made to drink copiously of balai and mint tea. A table-spoonful of the following potion is likewise given every hour:—℞. Aq. distil. Tiliæ Europææ; aq. distil. melissæ, āā. ℥ij.; tinct. opii, gtt. xx.; syrup. ether. ℥j. M. Finally, the patient is rubbed all over with a liniment composed of camphorated oil of chamomile, ℥ij.; laudanum, ℥ij.; liquid ammonia, ℥j.

M. Petit is said to have been more successful than most of his colleagues in the treatment of cholera. In a communication to the Academy of Medicine, he states that under the above treatment two-thirds of his patients have recovered.

27. *Non-Purgative Salts in Cholera.*—The following statement, relative to the treatment of cholera in the prison at Cold Bath Fields, are interesting, and are said by the editor of the London Medical Gazette, to be entitled to entire confidence as to its accuracy.

\* "The first twelve cases occurred in the vagrant's ward, and the patients were attacked soon after some prisoners had been admitted from St. Giles's, and other infected districts. The first case that was reported as cholera, occurred on the



5th of April. This man was suddenly attacked, and died after a very short illness with all the symptoms of the prevailing epidemic.

"When the first cases occurred, there were in all about twelve hundred persons in the prison; but, up to the beginning of this month, they were not afflicted with bowel complaints, nor, in fact, with any other epidemic disease, being as healthy as they generally are at that season of the year.

"The first four cases were treated in the common way, with brandy and opium, an ammoniated mixture, ginger, sinapisms to the region of the stomach, the hot air-bath, &c. &c.; and all of them died after a short illness.

"Since the 4th of April, up to this date, (April 17,) forty cases in all have been under treatment. Of this number, nineteen were admitted into the Observation ward with the premonitory symptoms of cholera. All of these had bowel complaints and suspicious ejections; some of them complained of severe pain in the abdomen, sickness of the stomach, and in several cases these symptoms were attended with cramps, chiefly in the lower extremities. The whole of them were immediately treated by Mr. Wakefield with non-purgative saline remedies, recommended by Dr. Stevens, and in general they were convalescent in one, two, or three days, from the commencement of this practice. From this we may infer, that where the disease is attended to early, and properly treated, the state of collapse may be prevented in nineteen cases out of twenty.

"We must state, however, that as the numbers increased, it became necessary to dismiss those that appeared to be least ill, on purpose to make room for others. Of those that were dismissed as convalescent, two were readmitted soon after in a state of collapse, and though every attempt was made to save them, yet they both died after a very short illness, with the symptoms of cholera in its most virulent form. With the exception, however, of the two that died, none of the cases, (seventeen in number,) were reported to the Central Board, partly, we believe, from a wish to avoid spreading alarm with respect to the prison, and partly because the disease was checked in the beginning; consequently, the patients had not all the symptoms of cholera, such as occur in the worst cases, or in the last stage.

"In addition to the above seventeen which were not reported, there were twenty-one cases where the symptoms of cholera were very distinctly marked. Of this number, four of the early cases were treated in the common way, with diffusible stimuli, &c. &c., and all of them died after a short illness. These, with the two cases of relapse from the Observation ward, make in all six deaths. Mr. Wakefield, however, having lost all faith in the common treatment, changed the practice:—at the request of Dr. Stevens, the other fifteen cases were put under the saline treatment, and all of them recovered.

"When the patients were first admitted, the following powder was immediately given, either in half a tumbler of tepid water, or occasionally in a little thin, clear, beef-tea:—

"Supercarbonate of Soda, ℥ss.; Muriate of Soda, ℞j. Chlorate of Potass, grs. vii.

"The above was given every hour, and continued until the patients were recovering from the state of collapse; after which it was diminished in frequency, in proportion as the reaction increased.

"In all these cases, the outline of the practice was nearly the same; but in several instances the treatment was varied according to circumstances. When the stomach, for example, was extremely irritable, it was found that the carbonate of soda, given by itself, or the tartrate of soda, in a state of effervescence, were the most effective remedies that could be used on purpose to allay the irritation, so as to enable the stomach to retain the stronger salts.

"During the progress of the disease, an enema, with a large table-spoonful of muriate of soda, dissolved in warm water, was administered with or without sugar, starch, &c. every three or four hours, at as high a temperature as the patients could well bear it. Sinapisms were also applied as early as possible to the region of the stomach, betwixt the shoulders, &c.; and in the cold stage,



frictions were also frequently used with warm towels. Of the seventeen cases that were treated in this way, two died, (namely, the two patients who were readmitted in a state of complete collapse,) making in seventeen cases, two deaths, and fifteen recoveries. But including the whole of those that were under the saline treatment, the total amount is, in thirty-six cases, two deaths, and thirty-four recoveries.

"The cases in question were under the care of Mr. Wakefield, the medical attendant of the establishment, and during his absence they were attended to by Mr. J. Wm. Crooke, who kept notes of the cases, and saw that the medicines were properly administered. We may add, also, that Mr. Wakefield, with a degree of fairness which does him great credit, invited Dr. Stevens to attend along with him to witness the effect of the saline treatment, which has here, we may say, for the first time, been fairly tried in this disease.

"We can also state, that the cholera made its appearance about the same period amongst a small colony of Italians, who live in a narrow lane within a few hundred yards of the prison. Of these, eleven were attacked. The three first cases were treated by bleeding, brandy, and opium, all used at the same time, and they all died. The other eight cases were attended by Mr. Whitmore, a surgeon in the neighbourhood, who, having witnessed the effects of the saline treatment in the prison, adopted it. All his patients speedily and completely recovered, except one, who, on the 13th, was so ill that he was not expected to live many hours; even he, however, is now in a state of convalescence. *Thus there have been in all fifty-three cases, seven of which were treated in the common way, with diffusible stimuli; and out of this number seven died; while, of the forty-six that were under the saline treatment, there were two deaths and forty-four recoveries.*"—*London Med. Gaz.*

28. *Treatment of Cholera.*—We extract the following remarks on the treatment of cholera, from a pamphlet by Dr. Brown of Musselburgh. "In the second stage, viz. cholera spasmodica, which I should mark with vomiting and purging having commenced, to the extent of having produced spasms, and the pulse much affected, and frequently not much better than a flutter, with considerable coldness, and the eyes somewhat sunk; the greatest exertion is necessary to save our patient from the state of complete collapse and asphyxia. It is in this state that I allude to our having placed in a state of safety nine out of ten. The plan here followed is, to lay aside the thought of every medicine *but opium*, and every cordial *but brandy*, if at hand. I instantly endeavour to get over an opium pill proportioned to the age of the patient; and if even a child, I prefer this form, and almost always, with a little exertion, succeed. If it should so happen that I cannot get over the opiate in a solid form, I then directly drop the dose of laudanum in a little powdered sugar, and succeed in that manner quite readily; having succeeded in getting over the anodyne, I do not allow a single drop of liquid, not even brandy and water, to be given for nearly an hour, but continue merely drawing a tea-spoon, or feather, dipped in pure cold water, occasionally through the lips; and when the opiate has been retained that time, there is a general cessation of all the alarming symptoms, and not only small quantities of such brandy and water may be allowed, but even panada, with a little brandy, may be commenced giving; by the end of two hours, at which time our patient is placed in a state of comparative safety; but if the symptoms should be obstinate—in case the vomiting and purging still continue, and seriously threaten a tendency to complete collapse—I lose no time in giving every nourishing and cordial enema, composed of strong beef brue, two glasses of good sherry, a proper quantity of flour, and as much laudanum as will be considered equal to a dose given by the mouth, which is in my opinion exactly double; and this remedy will be followed with the most immediate benefit if only kept an hour or two, which I have in general been able to effect, by taking care that it was *only tepid*, and by pressure upon the anus continued for an hour; and the case, if cautiously managed, will end in a rapid recovery, and if

any symptom of disordered bowels afterwards occur, they can be very easily managed.

29. *Chemical Analysis of the Blood of Cholera Patients.*—Dr. THOMAS THOMSON, Regius Professor of Chemistry in the University of Glasgow, availed himself of the opportunity presented by the occurrence of cholera in Glasgow, to examine the composition of blood drawn from cholera patients in well-marked cases, and has published the results in the *Philosophical Magazine*, for May last. The specimens of blood analyzed by Dr. T. were obtained from patients in the cholera hospital in Albion street. The cases were well-marked, and generally the blood taken after the disease had made considerable progress, and in several of the specimens the blood was drawn when a pulse could scarcely be felt at the wrist. The blood, when it was received by Dr. T. was in the usual tin-plate cups employed in hospitals, into which it had been allowed to flow. Its colour was always a very dark red, almost black; much darker than venous blood usually is; and it did not acquire a scarlet colour, as blood from a person in health does when exposed to the air. It coagulated as usual, and separated into serum and crassamentum; but the serum was much less in quantity than it usually is. It was always, (except in one instance,) more or less tinged with colouring matter; often so deeply as to rival the colour of the crassamentum itself. The following table exhibits the specific gravity of various specimens of serum from different cholera patients.

Sp. Gravity		
1.	1.0446.	This was pure yellow serum.
2.	1.0443.	Very slightly tinged red.
3.	1.052.	Very red.
4.	1.055.	Very red.
5.	1.057.	A very deep red.

A specimen taken out of the cavities of the heart after death was imperfectly coagulated. Being poured on a cotton cloth, a very dark red liquid dropped through, the specific gravity of which was 1.0938.

I got a specimen of blood from the cerebral vessels of another cholera patient after death: it was not coagulated; nor did it coagulate, though I allowed it to stand in an open vessel for thirty-six hours. After standing at rest for thirty-six hours, I observed that the uppermost portion was very fluid, and apparently watery; and though it had a deep red colour, it did not tinge a glass rod dipped into it. The portion at the bottom was thick and viscid, and stained strongly, sticking to every thing like tar. The specific gravity of the uppermost portion was 1.0533, while that of the undermost was 1.0699.

I got another specimen of blood from the heart; it was very imperfectly coagulated, and very viscid: its specific gravity was 1.1020. This blood did not by standing separate into two parts. The portion at the surface, after standing twenty-four hours, was as heavy as that at the bottom.

The great difference between the specific gravity of the serum of cholera blood and that of the serum of healthy blood is very remarkable. The mean specific gravity of the serum of healthy blood is 1.0287; while that of the five specimens of the serum of cholera blood stated above is 1.0506.

Cholera serum coagulates at the usual temperature, namely, when heated to 159°.

The ratio between the serum and crassamentum in cholera blood was found to be as follows:—

Serum	- - - - -	33.2
Crassamentum	- - - - -	66.8
		<hr/>
		100.0

If in healthy blood we suppose the serum to amount to 33.2, the crassamen-

tum will only be 27.16; thus it appears, that in cholera blood, the crassamentum is more than twice as much as in healthy blood.

The following are the constituents of two specimens of cholera blood subjected to analysis.

1. Blood, No. 1.							
Albumen	-	-	-	-	-	-	4.856
Fibrin	-	-	-	-	-	-	0.378
Colouring matter, with albumen	-	-	-	-	-	-	27.450
Salts	-	-	-	-	-	-	1.195
Water	-	-	-	-	-	-	66.121
							100.000

2. Blood, No. 4.							
Albumen	-	-	-	-	-	-	6.305
Fibrin	-	-	-	-	-	-	1.340
Colouring matter, with albumen	-	-	-	-	-	-	23.160
Salts	-	-	-	-	-	-	1.255
Water	-	-	-	-	-	-	67.940
							100.000

To enable us to compare this blood with that of persons in health, the following Table, exhibiting the constituents of healthy blood, will be of use.

Albumen	-	-	-	-	-	-	8.47
Fibrin	-	-	-	-	-	-	4.45
Colouring matter, with albumen	-	-	-	-	-	-	7.39
Salts	-	-	-	-	-	-	1.30
Water	-	-	-	-	-	-	78.39
							100.00

The following Table will show the proportions of the constituents on the supposition that the water in each amounts to 100.

	Healthy Blood.	Cholera Blood.	
		No. 1.	No. 4.
Water - - - - -	100	100	100
Albumen - - - - -	10.79	7.34	9.28
Fibrin - - - - -	5.67	0.57	1.97
Colouring matter, with albumen -	9.42	41.51	34.08
Salts - - - - -	1.65	1.81	1.85
		151.23	147.18

We see that the albumen is less abundant in the cholera blood than in healthy blood. But probably this excess in healthy blood is more apparent than real. It is not in our power to free the crassamentum completely from the serum. In my experiments, the crassamentum was simply left on a cloth till all the serum that would drop out had separated. It is clear, that by this process, more serum would be left than if the crassamentum had been dried on blotting paper. Now, this portion of serum would contain albumen, which would be added to the colouring matter, and would have the effect of apparently increasing its quantity. How far the quantity of albumen wanting to make up the quantity in healthy blood, amounting in No. 1. to 3.45, and in No. 4. to 1.51, may be accounted for by this circumstance, it would be hazardous to conjecture; but certainly no inconsiderable portion of it must be owing to this circumstance.



The deficiency of fibrin in cholera blood is very remarkable, and struck me very forcibly. The fibrin in the cholera blood No. 1. is only about 1-10th of that in healthy blood: the quantity in the blood No. 4. is nearly four times as great; but it is still only about the third of the quantity which exists in healthy blood.

In almost all cases a polypus is found in the heart of those who have died of cholera: this polypus has a buff colour, and consists of pure fibrous fibrin. Dried artificially, it assumes a reddish colour, as happens to fibrin in general. One of these polypi, which I freed from colouring matter by washing, weighed after being dried in a heat not exceeding 200°, 22.12 grains. It would appear from this, that fibrin is disposed to leave the blood of cholera patients, either during life, or at least soon after death: 22.12 grains constitute but an inconsiderable portion of the fibrin of the whole blood. If we admit a full-grown individual of the mean size to contain thirty-pounds of blood, the whole fibrin in that fluid must amount to 1.7 pound, or 11.900 grains: but it is possible that similar polypi may be contained in the large blood-vessels. This, however, was not verified by dissection; for the blood contained in the sinuses of the brain in one case, was found quite liquid, and did not coagulate, though it was almost as black as ink.

The great excess of colouring matter in cholera blood is no less remarkable than the deficiency of fibrin. If we make allowance for the albumen and salts still contained in the colouring matter, and take a mean of the quantity of colouring matter in Nos. 1. and 4, we shall find it to be little short of four times the quantity of colouring matter in healthy blood. Whether this increased quantity of colouring matter may be partially accounted for by any alteration in the fibrin, such as to make it soluble in water, it is impossible to say. But be this as it may, it is obvious that there is a great increase of colouring matter: for the fibrin and, colouring matter of healthy blood added together, do not amount to so much as one-half of the colouring matter in cholera blood.

30. *Extracts from the Reports of the Cholera at Danzig.* By JOHN HANFET, M. D.—

“Passing over subordinate features of the epidemic, I shall limit my descriptions here to the three principal forms of it, viz.

1. “The rapid and severe cases of fatal cholera.
2. “The protracted cases of fatal cholera; and
3. “Those less severe, which proved favourable.

1. “In most rapid and severe cases of fatal cholera, the patient was suddenly seized with sickness or pain at stomach, occasional pain, or feeling of weight and uneasiness in the hypochondria, the right hypochondrium especially, giddiness, prostration, great thirst and craving for cold drinks, a cold sweat that quickly became colligative and clammy; at times coldness alone, at others coldness and dampishness of the body—but never with shivering; the pulse was frequent but not hard, and soon became exceedingly reduced; the hands and features somewhat shrunk; the tongue was foul, unnaturally moist, and occasionally tremulous; the voice subdued; the eyes heavy and suffused, and the sight dim. These primary symptoms were in general either accompanied, or immediately followed, by retching and vomiting, and a peculiar watery diarrhoea, that often, however, proved irregular in the order of attack, occasionally even with respect to each other, and oftentimes severe, in hot, close, and electrical weather especially; griping pains in the abdomen; painful contractions of the muscles at the umbilicus; suppression of the secretion of urine, and occasional pain in the region of the bladder. Cramps in general followed the retching and vomiting, and in most instances invaded the calves of the legs at first; in their attacks of other parts of the extremities they proved irregular, seizing first the forearms, calves and forearms, hands and fingers, toes and feet, or hands, feet, and calves, in different instances, indiscriminately; occasionally they mounted up the thighs, but seldom attacked the trunk. Men rarely escape them, women frequently, and children generally.”

"The vomited matter in general consisted of undigested food at first, sometimes partially tinged with yellowish-green, of fluid ingesta, also occasionally imbued with greenish-coloured matter, and partly of slime and mucus. Often, however, it consisted of undigested food, or of fluid ingesta alone, without being in any wise so imbued. In the retching and vomiting which followed, the fluids taken continued to be rejected with a little greenish-coloured matter, with or without more slime or mucus. The dejections were always watery; sometimes as if coloured with feculent matter, in general they were either colourless, somewhat like whey, or had the appearance of rice-water, barley-water, occasionally somewhat dirty, or an evanaceous sediment, after being shaken in water.

"After this first advance of the disease, the following symptoms rapidly supervened; viz. increasing oppression at the heart, and short hurried and laborious breathing, ending in complete oppression and weight at the *præcordia*; tossing of the head about; anxious restlessness depicted, often with terror, in the countenance, which in general was of a dark brown, wan, or leaden hue, according to the complexion; insatiable thirst, with incessant craving for cold drinks, and the voice raucous and depressed. The retching and vomiting, and diarrhœa, with occasional *formina* and cramps, at first only intermitting at short intervals, subsided either abruptly, or gradually as vital exhaustion advanced; the pulse at the wrist, if not extinct—which it was in most rapid and severe instances—was accelerated to the utmost in frequency, and barely felt; the surface of the body quite cold, damp, and clammy, and the feet and insteps marked with bluish streaks and patches; the tongue cool or cold, and in some instances livid at the tip and edges; breath cool or cold; lips blue; nose sometimes bluish; voice below the breath, or gone; cheeks and eyes now quite sunk; pupils at times partly or completely dilated; eyelids half-closed, and encircled with livid rings; the parts of the conjunctivæ exposed being much the same in appearance as after death. Amid this complicated suffering, the patient was not insensible until just before dissolution, which ensued after some faint convulsive sobs, generally within from eighteen to seventy-two, and occasionally within from eight to eighteen hours after the first attack.

2. "In the protracted cases of fatal cholera, which have been few in number compared to the rapid cases, the following febrile symptoms have been observed, more or less, in different patients after the indefinite period of the first stage; namely, marked congestion, with pain in the head, deafness, humming noise in the ears, heavy stupor, continual drowsiness, partial ravings; a dark-flushed, brownish-yellow, squalid or cadaverous countenance; a dark-brownish clammy, or furred tongue; dark sordes about the teeth and lips; eyes heavy and suffused, or dry and parched, often with eventual dilatation of one or both pupils; a hot or cold clammy skin; pulse frequent, with febrile action, or very small; with pain or soreness of the abdomen, increased on pressure—and occasional tenesmus. With these symptoms, the excretions, as may be readily conceived, were scanty and vitiated. The stools dark, dark-green—very foetid; and the urine in general dark-coloured. Delirium generally took place in these before death, and they died within from three or four to five or seven days, or later, after the first attack; more generally on the fifth.

"These modifications of particular symptoms, bordering on each other, and referring to individual parts, depend, I need scarcely add, not only on differences in constitution, but, in a certain degree, on the mode of treatment at the commencement, and even on the state of the locality in which the patients happened to be placed.

3. "In the cases less severe,—and as I have observed,—of less unhealthy persons in whom the natural powers\* of the constitution were calculated to withstand the effects of the shock on the system, giddiness, retching and vomiting, watery diarrhœa, occasional griping pains in the abdomen, cramps, occa-

\* "This is certainly true; and yet a woman, named Eliza Brandt, thirty-six years of age, affected with tubercles and vomica, had, in July last, this less severe form of cholera, which soon gave way to all the hectic symptoms of her complaint."



sional painful contraction of the muscles at the umbilicus, thirst, and suppression of urine, took place, and proved occasionally severe; but the congestion in the head, and oppression in the chest, were certainly less marked; the pulse, although barely felt, was rarely entirely suppressed; coldness of the body, the cold clammy sweat, and other bad symptoms, were not marked in any great degree. The leading symptoms gradually, or abruptly, disappeared; and more or less of febrile reaction ensued, generally within from eighteen to twenty-four or thirty-six hours, or more, after the commencement of the disease; about which time hiccups, always a favourable sign, were occasionally noticed, and not before. The exact period of the return of the urine was not certain, being sometimes before, at others after, the first appearance of reaction: it was dark or high-coloured, voided in small quantities, with occasional difficulty, and frequently attended with some pain in the region of the bladder. The return of urine, though an important symptom, was not always decisive or a favourable result; on the contrary, hiccup, which however was not always observed, almost invariably indicated recovery. The dejections immediately after the commencement of reaction were fluid, scanty, and dark-coloured, as if imbued with blackish, feculent matter; but they very soon became successively brownish, and naturally bilious and feculent. Indeed, in the majority of cases of this description, the secretions and excretions soon got into play, and restoration was more or less rapid.

“Partial stupor, with little or no delirium, more commonly occurred in children, and spare aged persons free from previous organic or general complaint, and gave grounds for a favourable prognosis: they seemed tranquil, and as if naturally asleep. They were in general affected with *œdema* in the feet, and more or less in the legs after convalescence had commenced. *Œdema* also occurred in others after the disease, but not generally. In pregnancy abortion invariably took place, and was always a critical symptom, death or a favourable change soon following.

“From the description above given of the rapid and severe cases of fatal cholera in Danzig, its similarity to the Indian cholera appears manifest; and from the descriptions of fevers supervening after the first stage, as given in the second and third forms, its deviation from the Indian epidemic, in which those fevers do not generally supervene, also appears evident. The greater severity in general, which has been found of the vomiting, diarrhoea, griping pains in the bowels, and painful contraction of the muscles at the umbilicus, in the epidemic in India, compared to that in Danzig, is easily explained by the well-known influence of the climate in India on the whole system, and digestive canal in particular.

“*Extracts from the Pathological Report on fatal Cholera, both rapid and protracted, founded on the Examinations of twenty-one Subjects; the youngest of which was four, and the oldest ninety years of age, the rest having been of adult and middle ages.*—Many of the characteristic appearances after death will depend in a great measure upon the number of hours elapsed before the body is opened; the later the examination, the less truly characteristic, so far, are the appearances. Those I have examined were in general opened within, or about, twelve hours after death. Bodies at this season ought, however, to be examined as soon as possible, and always within at least six hours, if it can be done with propriety.

“Of all the morbid effects in appearance, which I have observed after death in the bodies of persons who died of cholera in Danzig, the most characteristic, perhaps, has been the great congestion of blood in the sinus venosus and right auricle of the heart, and in the veins throughout the whole body; the next is the invariable contraction of the bladder; and another, which, although not apparently constant after death from this disease, is seldom or never to be met with after death from others—namely, slight spasmodic contractions, or movements, if they may be so called, in the muscular fibres here and there in the body, and more especially in the face and extremities, not only immediately,



but some time after dissolution. These resemble galvanic effects produced in the body after death.

"The veins, and right auricle in particular of the heart, were full of black blood; some was always found in the left auricle; while very soft imperfectly coagulated lumps were found either in the right ventricle or within the aorta, either immediately at its commencement, or down below its curvature. These lumps were invariably as black as the blood found in the veins and right auricle; the thoracic aorta uniformly contained some black blood, but was never full, like the veins; the abdominal aorta also contained a little, but very little; the right ventricle had always a small quantity of black blood, the left ventricle a very little. The pericardium seemed more or less flaccid, and very often contained a quantity of dark-brown serous fluid. The parietes of the heart in general seemed soft, and I fancied, in a few instances, that those of the left auricle seemed thickened; this, however, remains to be confirmed or refuted by subsequent examinations. I occasionally observed morbid blackish, or bluish, and, in one instance, whitish spots on the external surface of the heart. The lungs were in general much more bluishly speckled than in most other cases—almost always collapsed, but dense from black blood—not as in hepatization of the lungs—frothy, black blood freely oozing from incisions made into them. The pleura, in its reflections throughout from the anterior to the posterior mediastinum, and over the upper surface of the diaphragm, seemed in general of a dark dull red. The trachea, bronchia, and larynx, contained a little frothy mucus, and were otherwise wet with a compound of serous and clammy fluid; but the internal mucous surface exhibited no vascular appearance. In general there was a considerable quantity of clammy, serous fluid found effused in the chest; all was wet, exceedingly soft and clammy, more so than I have been used to see after death from other diseases. The vena azygos was invariably full of black blood. The thoracic duct was in general empty, and seemed natural.

"On detaching the calvaria from the dura mater, the latter was, in most instances, spotted all over with the black blood that instantly issued from the torn vessels, especially along the lines of the sutures, where they are most numerous, in the youngest subjects particularly. The external surface was mostly of a dark bluish colour, and dry, but clammy feel. The internal surface of the dura mater, and its processes, or continuations, were not marked by any peculiarity, except, perhaps, in the appearances being more opaque, and feeling more clammy than usual. The tunica arachnoidea was in general of a wheyey, glossy colour, and somewhat clammy to the touch. Between this membrane and the pia mater, and more especially in the lower part of the cerebellum, there was occasional effusion or filtration of serous fluid; and in all instances there was considerable effusion of this fluid between the pia mater and the cerebrum and cerebellum both; in most instances it was found in the ventricles, in the fossule at the basis of the cranium; and, indeed, wherever this effusion between the tunica arachnoidea and pia mater in parts of the cerebellum, and the pia mater and the brain itself at large, was observed, it was also invariably observed in the same relative situations in the spinal marrow of those bodies in which the spine was examined—which were fifteen in number. In other instances, too, where there was effusion in the brain, we had only to elevate the pelvis and loins in order to see serous fluid issue forth from the spine through the occipital foramen. There was always a considerable quantity of thin black blood in the sinuses, in the inferior more so particularly. In all cases, the congestion of black blood in the veins of the pia mater was great, in the venæ Galeni, and choroid plexuses, accompanied with varicose dilatation of these vessels; and likewise the same relative congestion of black blood in the veins of the pia mater in the spine, especially in the posterior parts of it, where these vessels, being larger and more numerous, varicose dilatation was more conspicuous. The medullary substance of the brain seemed in some instances much softer than usual, but it might have been owing, in part, to the interval elapsed during hot weather between death and the time of examination. In some in-

stances black spots were visible on incisions into the brain; at times, too, the cineritious and medullary substance both seemed relatively altered in appearance as well as consistence. The state of the spinal marrow corresponded in all cases exactly with that of the brain.

After what has been said and implied of the venous congestion in the brain, spinal marrow, and thorax, it will be readily conceived in the abdomen, in which the large as well as small vessels are still more numerous and varied. The vena cava abdominalis and vena portæ, with the splenic and superior mesenteric trunks, and, in short, all their large tributary branches, invariably contained a considerable quantity of black blood; they seemed at times as if full of it, while the mesenteric veins always exhibited a characteristic black or bluish arborescent appearance throughout. The gall-bladder was not only of a deep green externally, but, in some instances, from a deep green to a bottle-green, and occasionally tinged here and there with yellow; and was in general distended, and full, or nearly full of fluid, generally black, and sometimes as if a little of yellow or brownish-yellow bile had been mixed up in it. The internal or villous coat of the gall-bladder was in general between a dirty yellow-brown and brownish-yellow—in a few instances it was a natural bilious yellow. The liver was invariably in a state of *engorgement* from the black blood, which, in all states of it, freely oozed out from the hepatic veins in particular, on incisions into its substance: it was in general discoloured, even after sponging the membrane covering it, and I think most in the younger subjects, and those who had not suffered from previous affection of it. The spleen was also in a state of *engorgement*, and of a black purple colour—and this independently of any alteration in its structure as referable to other morbid states. The kidneys, notwithstanding the suppressed secretion of urine, did not exhibit any peculiar change in general, further than that of venous congestion. The same was observed in the pancreas. It is not easy to say whether the ductus communis choledochus, and immediate biliary vessels, were in general contracted or not; sometimes I found greenish or vitiated bile at the opening of it into the duodenum, and sometimes I did not. I often found, in protracted cases particularly, the external parts of the duodenum and colon in contact with the gall-bladder, or near it, completely discoloured with yellow bile. With respect to the stomach and intestines generally, I cannot say that I observed any effects of the disease beyond what is referable to congestion of blood in the veins, and what might be attributed to the sedative nature of the disease. The mucous coat of the stomach, in particular, and parts of the colon, seemed, in some instances, soft, as if half macerated; indeed, the intestines generally seemed soft, and as if the internal mucous and villous coat could be separated from the muscular coat. The small intestines, I mean the jejunum and ileum chiefly, were more commonly of a dark dull red, or rather of a dark dull slate colour, on their external peritoneal coat, without any positive vascular appearance; sometimes of a pale slate colour, with vascular injection, or vascular congestion more marked; while, on the internal surface, they did not exhibit the same colour generally—still, in some instances, there was in some parts a modified appearance of it; while in various parts in others there was a manifest vascular appearance of the internal mucous and villous coat, though by no means corresponding to that externally. Besides the pale slate or leaden colour, and the dark red slate colour, I have observed a vascular dark red also—facts which will account for that tenderness, or pain, on pressure of the abdomen, so marked in cholera, especially in protracted fatal cases. In one instance of a young woman, who had died of true and very rapid cholera, the general external appearance of the whole of the small intestines was of a pale or light rosaceous hue, while that of the colon was quite pale. The mucous membrane throughout the whole canal was whitish, and as if half macerated. Whether the brown patches, which are at times observed here and there on the internal surface of the stomach and intestines, are effects of the disease, or of previous chronic inflammation, is in some instances not easy to determine. The stomach and intestines, as might be expected,



mechanically retained the last fluid ingesta; for, latterly, what came away, did so involuntarily. There were the remains of former mucus, more or less, throughout the whole digestive canal; and in true, rapid, and fatal cholera, little or no remains of feculent matter, except in its usual receptacles, namely, the commencement of the colon, the cæcum caput, in the transverse arch occasionally over across it, and in the sigmoid flexure, in which, in some instances, scanty portions of it were found. The mucous follicles in the internal membrane of the colon, at its commencement, and Peyer's glands in the end of the ileum, were occasionally found in large compact patches, more or less continuous, distinct, elevated, and somewhat indurated. Brunner's glands, as they are called, were not so observed in the duodenum. The colon externally, as well as the duodenum, particularly at its upper curvature, was discoloured at the upper part of the ascending portion, and beyond in the greater part of the transverse arch; but in the other parts it was of a pale, or pale lead colour. The peritoneum, in all its detached reflexions, was more or less opaque, having lost its shining glossy colour, more so than in most other congestive and sedative diseases of the system attended with fever, more even than in the compounds of remittent and intermittent fevers in tropical climates, with marsh miasmata, in which venous congestion is so very notorious. In protracted fatal cases I occasionally observed chronic discoloration here and there on the internal surface of the stomach and intestines—in some instances of a dark brown, in others of a dark brown-red, without being exactly vascular in appearance: at times vascular spots and patches were observed in some parts of the intestines, and the dark brown, and dark brown-red in others; they were generally in the colon, the commencement above and below particularly, in the transverse arch and sigmoid flexure. I observed parts of the colon in a gangrenous state, and chronic inflammation of the whole of the ileum, in one subject. In several instances the lumbricoid ascarides were found in the intestines. In some instances the commencement of the thoracic duct, or receptaculum chyli, seemed quite close and contracted. The invariable close contraction of the bladder, I have not omitted to mention; it was mostly lined with a little whitish mucus."—*London Medical Gazette*, Dec. 24th, 1832.

31. *Mustard Emetics in the Treatment of Cholera.*—Mustard emetics were introduced into the treatment of cholera by Dr. Smith of Newcastle. He had tried it in his own person, when resident in the West Indies, and, being aware that it was a popular remedy among the pitmen for asphyxia from choke-damp, he was led to suppose that it might be of service in rousing patients in the collapsed stage of cholera. His suggestion was acted upon at Sunderland through Dr. Gibson, it is said with beneficial results, and it has been since used there, at Newcastle and elsewhere. Mr. Greenhow says, that "in the cold, blue, pulseless stage of the intense type of the disease, I believe it to be a very valuable remedy in relieving the irritation of the stomach, and exciting reaction, but when full vomiting can be excited by milder means, especially when it can be done by copious draughts of warm water only, I consider it safer to avoid the irritating effects of the mustard."

The remedy is given in doses of two drachms in a cup of warm water, and repeated every ten minutes till full vomiting ensues.



## AMERICAN INTELLIGENCE.

*Summary of the Morbid appearances observed in Cholera.* By C. W. PENNOCY, M. D., and W. W. GERHARD, M. D.\*—From the autopsies published, and others in our possession, forming in the whole thirty-six cases, we have deduced the following summary of the pathological appearances. About two-thirds of the autopsies were made by M. Louis, and most of the others by M. Andral. All the organs were not observed in each of these cases, but with the exception of the brain and other parts which sometimes required more time for their inspection than could at the moment be allotted to them, the cases not mentioned may be fairly regarded as free from appreciable changes of structure. The *brain* was examined in thirty-one instances; of these the veins of the dura mater were more or less distended twenty-four times; effusion of serum beneath the arachnoid occurred eighteen times; the pia mater was injected in fourteen, the medullary substance in twenty-four, and the cortical in thirteen, besides the medullary substance presented a peculiar lilac tint, irregularly scattered in bands, in twelve instances. The ventricles contained more or less serum in twenty-four subjects, but the consistence of the brain was only *once* diminished. The *spinal marrow* was examined eight times, and invariably found without appreciable lesion. In twenty-seven examinations of the semilunar ganglion, it was once softened and three times reddish, but merely partaking of the tint of other parts of the body; in the other cases it was normal. The cervical ganglia of twenty-three subjects were twice of the general livid tint, and once enlarged, (peculiar conformation.)

*Thorax.*—Serum was found in the pericardium sixteen times; the left ventricle of the heart was hypertrophied in eleven, (nearly a third,) the right in no case. In one-third of the subjects liquid blood was found in the cavities of the heart; in the others there was also liquid blood, but more or less mixed with coagula. The lungs were examined thirty-four times, and in twenty-four were more or less emphysematous, and in five tuberculous, never however to a great extent. In seven they were more or less hepatized, besides evidence in a few other cases of a less degree of pneumonia.†

*Abdomen.*—The stomach was contracted in a third, and dilated in about the same proportion of subjects. The contents of thirty-six stomachs were seven times merely green or dark mucus, eight times a green liquid with mucus, green fluid in only five, yellowish liquid seven, and whitish with and without mucous flocculi nine. In exactly one-half of the number, there was a bright-red (pointillé) dotted injection of the mucous membrane; this injection seemed to occur most frequently in the cases of longest continuance; besides in one of these eighteen cases, there was ulceration, and in another, a multitude of little round depressions, not involving the whole membrane, as if made by a punch. In thirty-six cases the membrane was twice universally mammillated;‡ in the great tuberosity five times, the great curvature eight, and near the pylorus eleven; finally, in these thirty-six cases, the mammillation was entirely wanting but twelve times. The general colour of the membrane was very various, often pale or grayish, and sometimes of a delicate pink tinge, from the injection of the submucous tissue. The greater intensity of the lesions was generally thought to coincide with the longer duration of the disease; we have not suffi-

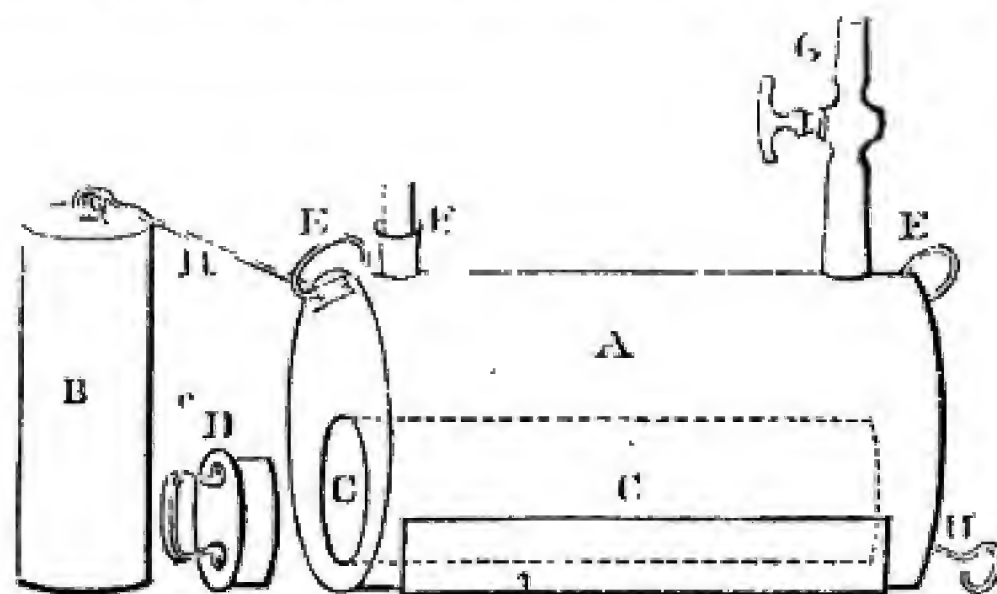
\* This ought to have been inserted immediately after the fatal cases of cholera at p. 360, but was not received until after that part of the Journal was printed off.—Ed.

† The frequency of emphysema may be explained by the advanced age of most of the patients, the same cause may have had some influence on the frequency of hypertrophy of the heart.

‡ Mammillation consists in the rounded elevations of the mucous membrane of the stomach, first described by M. Louis, in his work upon phthisis.

cient materials to justify an assertion, and prefer leaving the examination of this question until we shall be in possession of more ample facts. The external colour of the small intestine was usually of a grayish-rose tint, but sometimes pale, or slightly marked with arborizations, and depending in the greater or less injection of the cellular tissue. The matter contained in the upper half of the intestine was noted in thirty-two subjects, and consisted in fifteen of a white liquid, homogeneous and milky in its appearance, or mixed with mucous flocculi; there was a yellow fluid in seven, and greenish in eight; mucus only in the two others. In the lower half the matter was in ten cases whitish, in four yellow, and in six greenish, but dark red in twelve. The colour of the mucous membrane was observed in twenty-nine cases; in two it was gray or pale, in three greenish or yellow, in sixteen light-rose colour, more or less universally, and in eight bright-red. The glands of Brunner were developed in a notable manner in rather more than two-thirds of the cases; those of Peyer were more visible than usual in a rather less proportion, but rarely projected above their ordinary level. The consistence of the membrane was altered but fifteen times. The large intestine of thirty-three subjects contained, in thirteen, a white matter, a dark-red fluid in eleven, and greenish or brown fecal matter in nine; (the latter especially amongst the deaths during convalescence.) The colour of the mucous membrane was deep-red in rather more than a third,\* and partially gangrenous in two; the redness was most frequent in the cæcum. The bladder was contracted twenty-eight times in thirty-six; its contents were noted in twenty-nine; seventeen contained a white matter, eleven urine, and fourteen without urine. The kidneys contained a whitish substance in their calices in less than a third. The liver was rather engorged in eleven, pale in fourteen, and softened in seven of the whole number. The gall-bladder contained a dark-green or blackish bile, twenty-three times in thirty-four; in nine a lighter-green, or with a yellowish tinge; in one a glairy fluid, and in another a puriform matter. The spleen in twenty-eight instances was enlarged four times, softened three, and normal two.

*Description of a Portable Steamer and Cover.* By J. K. MITCHELL, M. D.



- A.—A cylindrical tin vessel, eleven inches long and six inches in diameter.  
 C, C.—A cylindrical cavity for the reception of the iron heater B—which weighs fourteen pounds; (a common iron clock-weight.)  
 D.—The door of C C.  
 E, E.—Handles.  
 F; G.—Apertures. F closed by a cork, G by a stop-cock.  
 H is a wire hook to convey and handle the heater B.

\* In another case dissected by M. Bouillaud, nearly the whole mucous membrane of the colon was of a dark brown colour and exhaled a strong gangrenous odour.

A tin foot on each side of the steamer gives its support, and obviates the expense and disadvantage of making the vessel flat at bottom.

At a red heat, the weight B, placed in C, and shut up there, will heat the water in A, and generate steam for a long time. Such a steamer may be placed under the bed-clothes with safety; or the steam may be conveyed by a tin tube from G to the patient's bed or chair. For expedition the water may be hot when placed in A.

The usual mode of sustaining the bed-clothes by hoops will do very well where moist heat is desirable; but for the application of either dry or moist heat at pleasure, the following instrument is useful. It consists of two parallel tin plates of semicircular form, half an inch apart, and large enough to cover the whole body. It resembles in shape a common wagon-cover. By placing either steam or hot water in the interspace, dry heat is produced; or by throwing the steam into the cavity which holds the body of the patient, moist heat is obtained. As this can be laid over the patient in bed, it saves the trouble of moving and replacing him.

*Case of Spasm and Severe Pain relieved by Ligature.* Reported by J. K. MITCHELL, M. D.—E. A. a female, aged seventeen, of good constitution and regular habits, resident in Sixth below Spruce, was attacked in the afternoon of the 15th of July, 1832, with slight cramp in the lower extremities, affecting chiefly the calves of the legs. These cramps increased in force as the day advanced, and in the evening a profuse alvine evacuation of a very liquid character, was followed by nausea and pain in the abdomen. After going to bed she vomited copiously, for about half an hour, frothy, yellowish flocculent matter of a bitter taste. At eleven P. M. the pain in the abdomen became very severe, and the intervals between the spasmodic attacks very short. The family administered laudanum freely, applied injections, sinapisms, heat, and castor oil, without effect, and finally at half past 12 A. M. of the 16th, sent for me.

I found her hands and feet cold and clammy, her pulse nearly natural, her countenance irregularly coloured, or flushed in ill-defined spots. Incessant motion and mournful cries expressed the severity of her pain. No evacuation of any kind had occurred after eleven o'clock, nor had there been any cessation of pain.

Bled her thirty-six ounces, administered laudanum and castor oil, ordered enemata, sinapisms, and dry heat with frictions. At half past one, no abatement of symptoms. Applied a tourniquet round the middle of the forearm so tightly as to demand nearly all my strength in turning the key. An immediate removal of pain and nausea ensued; the patient lost the irregular flush—the extremities became warmer, and every morbid symptom disappeared. To try the effect, the tourniquet was loosened, and the pain immediately recurred. It was then kept tight for an hour, when it was relaxed without inconvenience. Soon after I left the patient the pain and nausea returned, and the nurse endeavoured in vain to check them by the tourniquet. At half past 5 A. M. I found the case as at 11 P. M. and on tightening the tourniquet *which was badly screwed up*, I again succeeded in suppressing the symptoms. At this visit I sent for my late pupil Dr. Smiley, and after relaxing and tightening it; the tourniquet, demonstrated the perfect controul in which the pain and nausea were held.

Ordered a pill of ol. croton, gtt. j., taft. eme), gr. 1-6th; calomel, grs. ij.; rhei pulv. grs. iv. To be repeated every hour until effective. At 10 A. M. found that five pills had been taken, and an alvine evacuation of black fetid matter of the consistency of tar had been passed.

At 12 o'clock Dr. T. Harris saw the case with me. At this visit the nausea returning, it was instantly checked by tightening the tourniquet.

Once in the course of the day the pain returned slightly, and the vomiting recurred twice. In every instance the symptoms were removed by the tourniquet.

17th, 4 P. M.—The case is apparently convalescent.



*Remarks.*—The remarkable effect of the tourniquet in so severe a case, where ordinary measures for cure vigorously applied, totally failed to abate a single symptom or to allay a single pang, renders this remedy worthy of further trial. Hitherto experiments with it have not been made extensively enough to fix its relative value. The objections of the patient have commonly prevented the physician from making it tight enough, and the practitioner has been deterred by the dread of sphacelation. Neither should be regarded, because the patient approves when he observes the beneficial result, and the circulation cannot be entirely checked in the interosseous vessels of the forearm. The beneficial effect is only complete, when the hand is brought to a close resemblance to that of a patient under *cholera asphyxia*.

In the present case the tourniquet remained tight for four successive hours without the slightest subsequent disadvantage. In cases of great severity, the screw should be turned until the good effect is obtained, for it is almost certain to follow an adequate application.

This remedy, originally Japanese, travelled through China to the Russians, and was brought with the cholera into Europe, where it was occasionally approved in practice.

It is to be observed, that for a cure, ordinary medical means must be employed, for the tourniquet only holds pain and spasm in temporary check.

*On Asiatic Cholera Morbus.* By PAUL M. EYR, M. D. of Augusta, Georgia. —Believing it criminal to withhold from the medical profession any thing on the Cholera Morbus at this moment, and conceiving it a duty to comply with the request of the editor of the American Journal of the Medical Sciences, I send the following observations which were made last summer while I was in Europe. I had felt a reluctance to make a further communication to the public on this engrossing subject, which was warranted and justified from my late situation in the Polish army; my time and attention having been almost exclusively devoted to surgical cases, and opportunities of investigating this disease having been comparatively limited. If it is thought, however, that my observations, imperfect as they are, and that my opinion, humble as it is, can in any way serve my fellow-labourers in the treatment of this modern plague, I most willingly and cheerfully present them my views on the subject.

As I have neither time nor inclination to write a long article, I will briefly state the principal symptoms of the Asiatic Cholera Morbus, the appearances on dissection, and then deduce from them the treatment. An attack is usually preceded by diarrhoea or by uneasiness in the stomach and bowels for some days, or is suddenly announced by vomiting and purging, commencing about three o'clock in the morning, when the temperature is lowest of the twenty-four hours; and is followed and accompanied by cramps or spasmodic contractions of the abdomen. There is great prostration of the animal powers; shrinking of the external parts, particularly of the features, which assume in many places as well as the fingers and toes, a leaden or purple appearance; a cold and moist or even a wet skin, conveying when felt, the sensation of touching a frog; great thirst; the tongue is blue and cold, or moist and partly covered with a white fur; the pulse is either imperceptible at the wrist or is quick, frequent, feeble and intermitting; respiration is slow and very difficult; the voice is much altered, questions and answers being made in a low whisper; the secretions, particularly of the kidneys, are diminished, except into the alimentary canal, where they are altered and augmented, without however any bile; purging and vomiting, sometimes one only, but generally both; first the contents of the stomach and intestines are discharged, and then a peculiar whitish fluid resembling rice-gruel or sero-albuminous matter; and lastly, cramps of the extremities, most frequently of the legs, and which may be compared to a bayonet piercing the calf or most muscular part.

The appearances after death, were almost constantly the same. The external parts were very much diminished in size; the extremities, the nose, lips, eye-

lips, cheeks, &c. were of a bluish or livid colour, and the skin was wrinkled upon the hands and feet. The vessels of the brain in some subjects contained black blood, but generally there was nothing peculiar in the contents of the cranium. There was more blood in the spine, probably arising from position. The heart, lungs and large vessels were filled with a fluid resembling tar in colour and consistency. Two hours after death it was liquid and appeared like venous blood; but at twenty-four hours it seemed deprived of serosity and of the property of coagulation, and albuminous concretions were found in the heart. The stomach and intestines were either empty or contained matter similar to the vomitings and purgings; their coats were contracted and paler than in a natural state, or as was most frequently the case, presented all the varieties from congestion to sub-inflammation. The liver and vena portæ were distended with black blood, and the gall-bladder with tenacious, dark yellow, or green bile. In almost every case the bladder was found empty and contracted.

From the above symptoms and results of post mortem examinations, it would seem that the pathology of the cholera morbus may be explained by a want of oxygenation of the blood, which becoming surcharged with carbon is unfit to stimulate the heart to contraction, and hence the congestion upon the internal and vital organs at the expense of the surface and extremities. With this pathological view of the disease, and from the positive fact of there being a centripetal action of the blood, is easily deduced the principle of conducting its treatment—the equilibrium of the circulation must be restored or death will ensue. Now, mechanically speaking, there are two ways of affecting this object, either by introducing a power which will give the blood a centrifugal direction, or calling it back to the surface, by direct external applications. But the animal economy is governed by other as well as mechanical laws; the vital properties of the heart are oppressed, its energy is diminished, and its power of reflection impaired by an accumulation of blood, and this is peculiarly the case when the blood is black or not oxygenated, the stimuli or powers introduced to rouse its action would therefore be worse than useless; besides, we usually address the heart through the stomach, which is in such an irritable state as to reject even the mildest article. Upon the surface, on the contrary, there is a want of action, and stimuli are called for to excite the skin; to restore its lost or increase its feeble circulation, and thus draw the blood and heat from the internal parts of the extremities.

The plan of treatment which I have found most successful, consisted in varying the following means according to circumstances. Within the first four hours after an attack, bleeding will generally be necessary; but when prostration has ensued and when the surface is covered with cold sweat, leeches to the epigastric region, or cupping followed by warm fomentations or mustard plaster or blister, together with frictions and heat to the extremities, will afford the greatest and most speedy relief. Notwithstanding the various and multiplied articles of the materia medica which have been recommended, as opium, calomel, oxide of bismuth, cajuput oil, spirits, &c. to allay vomiting and purging and calm spasms, I must give my decided preference to dermoid applications, which invite the blood from the heart, lungs, liver, stomach, &c. the congestion of which produces these symptoms. I do not deny that there are cases which can be, and are relieved by medicines; but, since we possess no remedy which can drive the blood from the centre to the surface—since all internal medicines are apt to excite vomiting, one of the most painful, distressing and fatal symptoms of cholera—and moreover, since we possess means which can be easily managed and varied to suit circumstances, and whose action is plain and evident to the senses—I cannot forsake them to launch upon the sea of experiment and conjecture, in the treatment of this rapid disease. The language of those who advocate the administration of internal remedies, is to give so much of a mixture or so many pills, and if they produce vomiting, repeat the dose: but if a cure is to be effected by relieving the symptoms, why give those medicines which excite or aggravate them? An infusion of peppermint, or the oil or es-



sence of this plant, with a few drops of laudanum, in a little warm brandy and water, is what I have found best adapted for internal use; and even this should be prohibited when it produces vomiting. This symptom is often so distressing and so easily excited, that the stomach will reject whatever is presented to it. In such cases, I rely upon the horizontal position, perfect rest, and heat and frictions to the abdomen and extremities, without administering any thing internally. The warm bath I have known to be of great service, but the time necessary to prepare it and the exposure of the body to the air, are serious objections to its general employment. The same will not hold good in relation to the vapour bath, where the patient can be kept continually warm. Excessive thirst is best relieved by cold gum water, or by a piece of ice dissolved in the mouth.

Having enjoyed an opportunity of comparing the practice of the English, French, German and Poles, while stationed at Warsaw, in the months of May, June, July, and August, of the past year, and having experienced personally the disease, I feel some confidence in recommending the above treatment of the Cholera, to the American practitioner of medicine: and in support of its correctness and superiority, I will state that at Wisnia, a town of Gallacia, out of two hundred and forty persons attacked with it who were subjected to cutaneous frictions, and to the internal use of only an infusion of chamomile and peppermint *two alone died*.

To prevent an attack of cholera, cleanliness and sobriety ought to be most rigidly observed. All sudden or great impressions upon the system, as changes in the temperature of the air, cold and moisture, or emotions of the mind, excessive joy, fear, and the depressing passions, should be carefully avoided. The body to be kept moderately warm, a belt of flannel is recommended to be worn; and the mind calm, and confiding in a protecting Providence. The diet should be regular, and without any material change in the accustomed repasts. Emetics and purgatives are to be avoided, and certain articles of nourishment which are known to predispose to colic, or cholera affections; these are bad beer, sour-crust, cabbage, salad, beans or peas, spinage, cucumbers, pickles, unripe sour fruit, musk and water melons, cold meats, sour milk, &c. Good soups, beef, mutton, veal, fowls, eggs, Irish potatoes, bread, and tea in preference to coffee, should constitute the principal food of those who inhabit an infected district.

After all that has happened to admonish us, we can still hope that the cholera may not reach the Southern States. Its general course has been north-westwardly; from Calcutta it reached the Russian Empire; from Constantinople it passed to Great Britain. Although it existed in Hungary and in Vienna, still Lombardy, Switzerland, and Italy, have escaped; and the same thing is applicable to France and Paris, in relation to Spain and Portugal. It has not even existed in cities of the South of France, and Quebec and Montreal are nearly in the latitude of Paris; besides, these two Canadian cities are remarkable as being the most filthy and ill-ventilated of America. If it has progressed in a north-westwardly direction, and if it has avoided a southern latitude in Europe, why may we not escape its dreadful ravages? Let us, however, be prepared to meet it, that if it ever does come, we may be ready to cure the distressed, to relieve the afflicted, and to lessen the sufferings of the dying victim.

*Augusta, June 30th, 1832.*

*On the Symptoms of Cholera in New York, with some Remarks on the Management of the Disease.* (Read before the Boston Medical Society, July 23d, 1832, by JOHN WARE, M. D., and communicated for the Boston Medical and Surgical Journal by the publishing committee.)—The object of this communication is to give some notice of the symptoms of cholera, as they were presented to the writer during a short visit to the city of New York, since its prevalence there, and some suggestions with regard to the management of the disease.

A few days' opportunity only of observing so formidable a malady, may be thought hardly sufficient to justify an individual in offering any thing concern-



ing it to his medical brethren or to the public. But it is to be recollected, that in the case of a new disease, we are all obliged to approach it in a state of at least partial ignorance; he, therefore, who knows but little from actual experience, may be able to impart something. His labours are still more likely to be useful in preparing others for its attack, if it present a variety in its aspect, as it appears in different places; if for instance it differ in Canada and New York, from the description we have had given of it in Asia and in Europe.

This appeared to be the case. At least the impression made by the inspection of patients labouring under cholera, was different from what the usual descriptions given of it had prepared me to expect. Not that there was any variation in the symptoms or course of the disease, which could for a moment throw any doubt on its identity; but there was a very considerable variation in the relative prominence of the phenomena.

So familiar have we become with accounts of cholera, that, instead of describing the disease, as it presented itself in detail, it will be only necessary to refer to those symptoms concerning which some particular remark occurs. The most universal of the symptoms, were the deadly coldness of the whole surface of the body; and the soaked, sodden and shriveled appearance of the hands and feet. Generally, also, there was a bluish or livid tinge of the skin of these parts, particularly of the extremities of the fingers beneath the nails. The hand in some instances resembled that of a person who had been working in a black dye. The blue or dark colour of the face and of the rest of the body was not very common; much less so, according to the information of those who had visited Montreal, than it had been there. Still, a few patients were seen so dark, as not to be readily distinguished, across the ward in which they laid, from mulattoes. The cold tongue, which has been described as so strikingly characteristic in some places, was noticed in but a small proportion of cases. It had generally a slight white fur. The pulse, though commonly very small and obscure, was not so frequently extinct at an early period of the stage of collapse as was expected; and in some cases it was found quite distinct and of good volume, at not a very long period before death.

The vomiting and purging were less violent and frequent than had been expected. It was rare to witness more than one or two patients suffering from either, during a visit to a hospital containing twenty or thirty. They seemed to take place chiefly in the earliest period of the case, and in some, never existed in any violent degree. One patient was seen at 11 A. M. whose bowels, according to his report, had been in a regular state the day before, and who had only had, in the course of the morning, three or four discharges in the privy. He had not vomited at all; yet he had scarcely any pulse—his skin and tongue were cold, and his hands and feet were affected by cramps. He had regarded himself as being well on rising in the morning.

Nearly all the subjects of the disease complained of cramps, or said that they had been afflicted by them when first seized. Still, very few were seen labouring under them so severely as to occasion any marked external demonstration of suffering. In nothing, indeed, did the cholera of New York differ more from the most common descriptions, than in the absence of any *indications* of great distress. It is true that a few seemed in much agony when vomiting, or undergoing spasm; others complained bitterly of thirst and oppression, and burning at the stomach; but in general there was little complaint, and little disposition to notice external objects at all. The aspect of the patients was almost that of indifference, and unconcern as to the event in themselves and in others. They seemed like persons totally absorbed in their own sensations, although in sensations which were not of a very acute or distressing character. They appeared often as if in a benumbed or stupefied state; yet were without difficulty roused, and were at once perfectly sensible. Neither was there the apikiness or irritability which has been said to appertain to patients with cholera. They answered questions readily and pleasantly. Though surrounded by medical men, and undergoing frequent examinations, I saw no instance of the manifestation of ill-

humour. Often, as soon as a physician approached the bed-side, the tongue would be protruded and the arm stretched out.

In some cases the peculiar hollowness of the countenance, and the shrinking of the body and limbs were strongly marked; and in these, the aspect of the dying person was almost terrific. But these appearances were frequently wanting even in bad cases, and I am not aware that the countenance could have been always distinguished with certainty from that which is exhibited in many other severe and exhausting diseases. Neither did the voice vary essentially from that of patients with such diseases. The shrieks and cries of pain, which accompanied the vomiting and spasm, were perhaps a little more characteristic.

The respiration was not always accelerated; but generally at least was performed without much action of the diaphragm, and was consequently attended by considerable heaving of the chest, and some labour. The chest seemed also as if imperfectly distended. In the act of death, this mode of respiration was continued; it simply became less and less full, till it ceased altogether. Only one individual was noticed, in whom death took place with a kind of breathing like that so commonly witnessed, viz. that accompanied by the rattling of mucus in the throat.

The excretion of urine was almost universally wanting during life; and but little was found in the bodies of those who were examined, except, as was observed by a gentleman who had made many dissections, where the vomiting and purging had ceased for a long time before death.

From the dissections which were witnessed, and from the accounts of gentlemen\* who had made a large number, it was inferred that the heart and large vessels did not generally contain any large quantity of blood. The heart was found sometimes empty, and sometimes all its cavities were moderately filled with blood. The arteries always contained black blood. On comparing blood found in the descending aorta with that contained in the corresponding part of the vena cava, that in the aorta resembled common venous blood, whilst that in the vein was still darker, thick, and imperfectly coagulated, being nearly of the consistence and colour of tar. In the cranium, there was an effusion of serum into the ventricles and at the base of the brain. The blood-vessels were quite full, but not usually so. No morbid appearance was observed in the spinal nerve. The lungs were considerably congested. The stomach and small intestines exhibited a slight reddish tinge when held up to the light, but showed no signs of inflammation. The large intestines had a whiter or bleached appearance. There was no unusual dryness of the peritoneum. The whole canal was filled with the peculiar liquid matter which constitutes the evacuations in this disease. This was generally in large quantities, of a dirty grayish-white colour, though in one case tinged with green, and of a flocculent appearance; sometimes quite thin, sometimes as thick as thin hasty pudding. It resembled gruel which has not been sufficiently boiled, or coagulated milk, the curd of which has been very finely broken up. Similar evacuations are occasionally witnessed in severe cases of common bowel complaints. Not a particle of fecal matter, or matter coloured by bile, was noticed in any case, unless indeed the green colour just mentioned was occasioned by the presence of bile. The gall-bladder always contained bile, and its duct was pervious.

It is a matter of some interest and importance to determine whether we have any reason for believing, as some have done, that the spasmodic or malignant cholera is merely a more intense form of common cholera morbus, and is produced by an accumulation and concentration of the ordinary causes of the latter disease. That they have many symptoms in common, is not to be denied. It is quite certain that the common exciting causes of cholera morbus, such as irregularity and excess in eating or drinking, great fatigue and exposure, may also operate as exciting causes of spasmodic cholera. But, on the other hand,

\* Dr. Morell, of the Bellevue Hospital, informed us, that of the first twenty fatal cases all were examined after death.



the course which the complaint takes, and the character of the symptoms in which it terminates, render it probable that there is, previous to these exciting causes, some peculiar predisposition of an unknown nature existing in the constitution of the whole population where it prevails. Our common cholera, in some cases, reduces a patient to a state of great and irrecoverable exhaustion. It is accompanied by severe cramp, cold extremities, weak and fluttering pulse, ending in death. Yet, in a parallel state of exhaustion, is the aspect of the subject the same? Do the peculiarities of complexion, the state of the extremities, and the character of the evacuations, correspond? In common cholera, also, the exhaustion seems to be commensurate with, and to be produced by, the vomiting, purging, and spasms; in the spasmodic, on the contrary, there is no such correspondence. The most rapidly fatal cases are not always those in which the vomiting, purging and spasms have been the most violent. Some individuals fall into the state of collapse almost at once, after but a short continuance of the symptoms which usually precede it.

It is desirable also to determine whether it be possible, in the earlier stage of spasmodic cholera, to distinguish it with certainty from an attack of the ordinary disease; to determine, for instance, in a place where cholera was not prevailing, that a case attended by vomiting, purging and spasms, was or was not the commencement of the epidemic. I fear the practitioner must wait for the symptoms attending the stage of collapse, before he can feel authorized to pronounce with certainty. In forming our judgment in such a case, we are to be chiefly governed by the state of the skin and pulse, and by the character of the evacuations. When the skin continues full of red blood, after considerable vomiting and purging; when the pulse remains full and of tolerable volume, and the extremities warm; when also the evacuations have a fecal or bilious appearance, one could hardly be mistaken in regarding the case as one of common cholera. Where, on the contrary, the pulse becomes quickly small and weak, with a dirty, dingy and bloodless skin, cool extremities and dejections of a light flocculent character, one would readily suspect spasmodic cholera; yet we surely see many such cases which the event, in ordinary seasons, proves to be nothing more than the common disease. Still, in such a case, if the malignant disease were either prevailing or expected, a physician could give no other than a doubtful opinion as to its character.

It did not appear, from such observation as was made of the effect of remedies, that any material variation was produced in the rate of mortality in cholera by the measures employed. This indeed seemed to be the general impression of those engaged in the management of the disease. And, it may be asked, has not this been the result, wherever it has prevailed, so far as we can judge from the reports of cases and deaths which we find in various publications? We have had, it is true, many flattering recommendations of peculiar plans of treatment, and general statements of their efficacy; but does not the general uniformity of the returns of dead and convalescent, in different places, satisfactorily show, that the good effects of remedies have chiefly existed in the imaginations of those who have employed them? The probability is, that this epidemic, like all others, varies in severity in different places. This accounts for the apparently greater success of that method of treatment which happens to have been employed where the disease has been mild. So, too, when it first makes its appearance in a new spot, it seizes on the worst constitutions, and on persons most strongly predisposed; and hence its great and appalling mortality. After a while it attacks individuals of better constitutions, and who are less strongly predisposed; these make a more determined resistance to the disease, and recover perhaps in a greater proportion. Hence, towards the close of the epidemic, the cases seem to be more tractable, and to be more under the influence of remedies.

How can we, except by means of some such explanation as this, account for the apparent success which has attended modes of management the most opposite in their character, unless we believe the statements which are made to be



wholly without real foundation, and to have had their origin in the want of accurate observation, the self-deception, or the wilful misstatement of their authors? Many physicians are loose observers, many are loose reporters, and some are both. I know not in what other manner we can account for the assertion of Broussais, that he loses but one patient out of thirty, while all his medical brethren are losing half, or very near it. One might expect, if his statement were actually true, that public opinion would soon force the whole faculty to the adoption of a method of management so successful; and that a Paris mob might imagine the physicians of all the hospitals, except that of the Val-de-Grace, engaged in the combination to poison the people—since in the latter the patients all came out alive, and in the former all dead.

It is unquestionably a humiliating confession to the medical art, that fifteen years' experience has not taught us any mode of arresting the destroying progress of this disease. Yet, if it be true, it is better that we should know and acknowledge it; since then, instead of being distracted by the claims of opposite and contradictory statements, we shall direct our attention to the devising of new methods of treatment, or at least to means of prevention. The plague, which was once the scourge of Europe, is no more within the controul of medicine, than it was centuries ago; but it has been banished from countries which it once visited, by preventive measures. The same is true of yellow fever, and the same may be found true of cholera.

According to this view of the subject, the treatment of cholera cannot yet be reduced to any fixed rules, but must be, in the main, tentative or experimental. It is not the intention of the writer, in speaking of means of treatment, to offer any opinion as to their probable efficacy, but merely to direct the attention to such as appear worthy of a *very thorough* trial; for it is obvious that only the *very thorough* trial of a remedy gives it any fair chance of success in a disease like this.

We may also remark, that the rapid course taken by this disease does not allow us to place dependence on remedies which require time to produce their effect. Our whole range is confined to a very few hours. Except, therefore, in the premonitory stage, we must confine ourselves to means which operate almost immediately.

We should also bear it in mind, in treating cholera, that, in all cases of violent action or of extreme want of action, the susceptibility of organs to the influence of remedies is either very much exalted, or very much diminished; generally the latter. Thus in fainting from excessive hemorrhage, great quantities of stimulus are required to produce an effect, and they must be frequently repeated in order to keep up the effect. Large doses of laudanum are also borne without the production of its usual operation. The same is true of any violent pain, and of excessive secretions. The power of the medicine given, is neutralized by the disease. Thus a man with diabetes will bear twenty or thirty grains of opium in a day; and one with severe colic, two or three hundred drops of laudanum in a few hours.

It should also be premised, that the remarks made with regard to treatment refer to the confirmed state of the disease, that, viz. in which its peculiar character is fully developed. There is a premonitory or preparatory stage, in which the state of the system and the symptoms of disease are different, and require different management. It is not, however, in this stage that patients are generally seen in hospitals, nor usually in private practice; but it is in this stage that many physicians are so sanguine with regard to the effects of remedies.

Whatever be the variety of internal means recommended by different practitioners, they almost uniformly agree in the propriety of external warmth and stimulus; and in all diseases attended by coldness and want of action in the surface and extremities, the restoration of warmth and circulation is one of the first objects which suggests itself. In cholera, this is very strongly called for, since not only are the external parts cold and inactive, but, as some assert, the internal also. More proof, however, is required of the coldness of the internal

organs than has yet been given: there are circumstances which render it doubtful, and it is a point which should be carefully investigated. Still, no doubt can exist of the coldness of a considerable part of the mass of the body.

Now it is very true, that this coldness is one of the consequences of the morbid condition on which the disease depends, and not the morbid condition itself, and that removing this effect will not prove a remedy for its cause. Yet it is also true, that many of the secondary effects produced by disease, are an obstacle to the removal of the disease, and obstruct the salutary efforts of nature or the influence of remedies. We often assist nature, and art also, in the struggle with the primary cause of disease, if we can artificially remove or suspend these secondary effects. Thus we assist the cure of dyspepsia by neutralizing the acid generated in the stomach as a consequence of this disease. So, too, where the system is sinking from a poison which operates by a suspension of that influence of the brain, which is necessary to respiration, if artificial respiration be kept up for a sufficient time, the effect of the poison ceases, and life is preserved. Something like this may be true with regard to the power of maintaining the animal heat in cholera. The reduction of the temperature of a large portion of the body and circulating fluids, for several hours, would alone be sufficient to cause death, were the system otherwise capable of struggling with and overcoming that internal state in which the disease consists. If a man, with the ordinary power of maintaining animal heat, were exposed to a degree of cold which should reduce his temperature to seventy-five degrees, this reduction alone would soon destroy life. This often happens in cases of shipwreck and exposure at sea, where persons are chilled to death by immersion for a long time in water at a low temperature. The patient with cholera is placed in circumstances somewhat similar. His power of resisting cold being lost, he is cooled down by an ordinary atmosphere as much as a healthy man by the low temperature of the ocean.

A resemblance has been supposed to exist between the patient with cholera and an individual frozen by exposure, and it has been recommended to employ in the former the same treatment as in the latter case. But the resemblance is not so close as that which has been already suggested. In persons frost-bitten, the external parts are actually frozen; or at any rate reduced to a much lower temperature than those cholera patients, whilst the internal parts retain their powers of resistance. This at least is true of recoverable cases. Although the temperature to which the surface is reduced is much lower, yet the whole body has not been equally cooled, and the heat providing powers not equally exhausted. No one would think of dashing cold water, or rubbing melting snow, over the body of a man chilled by immersion in cold water, to restore his animal heat; neither is it probable that this measure would be attended by any beneficial result in cholera.

We may regard it, then, as an essential part of the treatment of cholera, whatever means we may otherwise employ, that warmth of the body should be restored by external heat, and its activity promoted by external stimulants. It is by no means a matter of small importance by what agents we effect this. Let us recollect what we are to accomplish, viz. to warm through a solid mass of flesh. In order to impart heat, we must in the first place surround the body with bad conductors, which will retain the heat which is communicated to it, viz. with blankets, rugs, or comforters. We must, in the next place, apply, within these, substances which contain a good deal of heat, and which will give it out readily to the body; such as bottles of hot water, hot bricks, billets of wood, bags of sand, &c. &c. We may see at once how insufficient air-baths must be, as indeed they have been found. Air is a slow conductor, and contains but little heat. How long would it take to raise the temperature of a dead body twenty degrees in an air-bath? I suspect many hours. Hot air may warm the skin readily; but in cholera we must go deeper than this—we cannot rely on the heat-making power of the system to aid us in our endeavours—we must use means which shall extend as far as the coldness extends. Neither can we ex-



pect any amount of external covering alone to raise the temperature of the body. Blankets assist in the accumulation of heat, when the body is capable of generating it; but they in no degree tend to warm it, when it has not this power. They could never warm a drowned man who had ceased to breathe.

The consideration that the heat-producing power is suspended in the cholera patient, should lead us to be cautious in relaxing the application of external warmth. It is not sufficient that the patient feels warm; the means should be persevered in, till a decided reaction has taken place, indicated by the state of the pulse, countenance and respiration, and should even then be cautiously relaxed. Neither should these measures be delayed till the patient is actually cold, when the stage of collapse is coming on. The loss of heat should, as much as possible, be prevented, by a great abundance at least of external covering, if not the application of absolute heat.

At the same time that the external warmth is thus provided for, it is important that the means used should not in some measure defeat their own object, by depriving the patient of fresh and cool air. Any imperfection of respiration, essentially impedes the keeping up of the animal temperature; and both foul air and warm air, are productive of such imperfection. We should be cautious, therefore, that the rooms of cholera patients be not unduly heated, and that an abundance of fresh air should always have access to them.

External stimulation seems indicated, as next in importance to external warmth. This might be effected in various ways; but none seems more speedy, and certain in its operation, than the poultice, or plaster of flour of mustard and vinegar. How extensively it might be proper to apply this, experience only can teach us. Few, even of cholera patients, are for any long time insensible to its effects.

A powerful, and, it is believed, a new method of exciting reaction by external application, has been adopted by Drs. Lee and Roe, at one of the New York Hospitals, and, as has been stated, with remarkable success. It consists in the friction of the whole surface of the body, when in the state of collapse, with an ointment, composed of mercurial ointment, camphor, and capsicum. Very little else is done, and nothing but a small quantity of drink, or of ice, given internally. We shall no doubt derive, ere long, a full account of the particulars of this mode of practice, and of the success which has attended it, from these enterprising physicians themselves; and it would be premature to give, at the present time, any thing more than this general statement. It is certainly, however, one of the measures which deserve a thorough trial from those engaged in the treatment of cholera.

But little can be said of internal remedies. The general impression seems to be, both at New York and in Canada, that in the confirmed disease, nothing has as yet produced any very decidedly favourable effect, although all methods of practice have been tried; the calomel practice, the bleeding practice, the ultra-stimulating practice of spotted fever, the moderately stimulating practice, the camphor practice and the ice practice. Still, we are hardly ready to give up in despair, and may inquire, whether it may not still be worth while to go over the ground again with some of these measures, unless we should be so happy as to escape a visit from this disease. The measures to which it might be desirable to give this trial, would be,—

1. The highly stimulating practice of Drs. Miner and North, by means of immense quantities of opium, brandy, capsicum and essential oils. So far as tried, this course has been said to be attended with unfavourable effects. Might it not bear a fairer chance of success, if combined with the injection of a saline solution into the veins? It may be, that these stimuli fail of their accustomed effect, from the want of a sufficient amount of circulating fluid.

2. The mercurial practice, carried to the greatest possible extent, both internally and externally. Dr. Chisholm administered immense quantities of mercury to his yellow fever patients; one patient having used over five thousand grains, and many having actually taken more than a thousand grains by the



mouth. We might do the same in bad cases of cholera, at least without danger; and besides the administration of calomel by the mouth, and frictions, we might also make use of mercurial fumigations continued for a great length of time, a whole day for instance, which would not only act mercurially, but would also assist in raising, or at least in maintaining when raised, the animal heat.

3. The administration of ice internally, according to the method of Hroussais. Though not placing unqualified reliance on the accounts given by this teacher of his practice, and believing him to be much wanting either in accuracy or in sincerity and good faith, the peculiar circumstances in which we are placed with regard to the management of cholera, renders it our duty to employ all those means for which very decided success has been claimed.

4. Bleeding from the general circulation. It is remarkable that no remedy has been more strongly recommended than this, in works on cholera as it has elsewhere prevailed; and yet that no decided success has followed its employment in this country, so far as we have any evidence. Still we are led to believe, such is the authority on which it has been recommended, that there may be states of the disease in which it will be followed with advantage.

5. Injection of large quantities of warm water, or of a warm saline solution, into the veins. So far as we have been informed, the immediate effect of this measure has been to restore the circulation and warmth of the patient; in fact, to rouse him from the state of collapse. Of its final success, we know less. It is remarkable that, of all the cases mentioned in a late communication in an English Journal, and republished in the Boston Medical and Surgical Journal, we are not told of the result of a single case. It was employed in the case of a patient at the Bellevue Alms-house, at New York, by Drs. Morell and Baker, and twenty-four ounces of warm water were introduced into the veins. The immediate effect was highly promising, but relapse and death ultimately took place. We have been since informed that an instance of complete recovery has followed the saline injection, in the Crosby street Hospital, under the care of Drs. Rhinelander and Dekay. Measures which afford even a temporary revival should, in this disease be seized on with eagerness. If therefore the injection into the veins proves to be as effectual in the promotion of a temporary reaction as has been asserted, it may answer a valuable purpose by prolonging life, and thus affording time for the operation of other remedies, even if it should not be sufficient for the preservation of the patient. Like external heat, therefore, its employment should be cautiously combined with that of all the other remedies in different cases; since we may, perhaps, arrive at that success from the judicious combination of means, which we seek in vain from perseverance in any single course.

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*Remarks on the Pathology and Treatment of the Disease termed Malignant Cholera.* By J. P. HOPKINSON, M. D. Demonstrator of Anatomy in the University of Pennsylvania; Lecturer on Anatomy in the School of Medicine, &c. —The disease termed malignant cholera, so generally fatal under all modes of treatment, so unaccountably cured occasionally by almost any course, however extravagant or contrary to former experience, seems still to call forth the ingenuity of the profession in devising something new in the treatment, or in endeavouring to find some specific whose power shall never fail. Is it not strange that medical men should now for the first time have abandoned all their principles of practice, and throwing aside reason, catch at any shadow that was passing by, in the gloom of deficient or erroneous pathology? What must be the conclusion of every practitioner, who, anticipating the approach of the disease, and wishing to prepare himself to do justice to his patients, consults any or all of the innumerable books, pamphlets, suggestions, &c. &c. on the subject? Can he draw one single principle—on which to reason and exercise his judgment? Can he find one sound pathological view of the disease, founded upon observation and justified by general experience in practice? It is a melancholy truth he cannot—and yet this cholera has been distinctly before the

profession for at least fifteen years, and for probably more than a century has the same affection, or one very similar to it, been known. In this state of things, I also had formed my speculations, and felt the same indecision as to the best mode of practice, when at length the epidemic visited our city, and soon presented itself characterized by all its most alarming features. The first case of which I had any personal knowledge, was in a post mortem examination I was called upon to make. Although this case was complicated by a strangulated femoral hernia, and attempts were made to explain it away as not a case of cholera, yet the very slight vomiting, the sudden death, the blue skin, the corrugated fingers, the immense collection of rice water fluid shut up in the intestines, the total suppression of urine, and finally, the universal congestion of the stomach and bowels, led to the evident conclusion, that the immediate cause of this woman's death was of a nature different from ordinary strangulated hernia; in fact, that, although only one or two cases had as yet occurred in the city, this could not be considered other than malignant cholera.

The second observation was made upon a strong, muscular man, brought into the cholera hospital a few hours after the attack, presenting symptoms of the most malignant character; he was pulseless, and covered with a cold, clammy sweat; had a cold tongue; the blue and doughy skin; anxious countenance; whispering voice; the sunken eye, &c. and he was clamorous for cold drink. External heat, turpentine, frictions, ice, carb. ammonia, camphor, opium, warm brandy-toddy, and finally, injections of brandy and water into the veins, were *tried* in succession, and interrupted only by the hand of death, about five hours after his admission. Here it may be remarked, that, although stimulants of the most active and diffusible nature had been introduced not only into the stomach, but into the very heart itself, yet no perceptible impression was made upon either—and the unfortunate patient seemed to sink as rapidly as if nothing had been done.

The next case of decided cholera which came into the hospital was a coloured man, with cramps, vomiting and purging; he was on the very eve of the collapse, but had pulse; he was bled—the pulse rose—the bleeding was repeated, until three pints of blood were extracted; he took also some vol. alkali; no difficulty was experienced in bringing about complete reaction, and this man soon recovered. The practice pursued in the hospital after this was *unsettled*; all the various plans recommended, of dry frictions, bleeding, hot air, camphor, calomel and opium, vol. alkali, &c. were resorted to and failed in almost every case in a collapsed condition. Some of these cases were examined, and presented the usual appearances described in any treatise on the subject. It was the bad success of this treatment, added to the results of subsequent inspection of the body that first gave me a disgust for the stimulant practice. I saw no marks of inflammation except in cases of drunkards, or where it had probably existed antecedent to the attack of cholera; in one case inflammation was found in the caput coli; in another, the rectum was most violently inflamed, and sometimes the glands of Peyer were enlarged, but these appearances were by no means so general as to justify any conclusion as to their connexion with the immediate cause of death. Dissection had not as yet satisfactorily located the disease in the central nervous system. The lungs were almost universally healthy, and thus the abdomen alone remained to be studied in our pathological researches. As already stated no decided marks of inflammation presented themselves in any of the abdominal viscera—adequate to account for the sudden death, nor in fact are the symptoms during the course of the disease those of inflammation—but more of this presently. The appearance of the intestines externally is so peculiar, that no one who has once seen them, can be deceived. In every case I have examined, the most decided proofs of universal congestion were apparent. When the omentum was raised, the intestines, (generally distended,) presented a mottled surface formed of small bluish and red points, the former preponderating, so as to give altogether a dark chocolate appearance—a closer examination traced the connexion between these



specks and the veins—of which the small ramifications, the branches and the trunks, were filled with dark blood. The mucous surface was more variable in its appearance. The valvuli conniventes being in some places of a bright red—in others, pale. *Ulcerations or stellated inflammation* I did not find in any case in the intestines. The inspection of the stomach was equally unsatisfactory, or perhaps more so. In some cases inflamed, in others not; sometimes having a softened mucous surface, easily scraped off, while in others again, this membrane retained its ordinary degree of firmness; in one word, the stomach, in this respect, presented nothing I had not often seen, and what dissections made in various diseases do not reveal every day. The only condition at all general was a congestion of the veins apparent on the external surface, and its being exceedingly large, flabby, and filled with fluids. The liver, kidneys, &c. although sometimes congested with dark blood, or perhaps disorganized by some old affection, showed no marks of recent organic disorder that were appreciable; bile and dark blood sometimes flowed when incisions were made into the liver, and there was invariably a total suppression of the secretory action of the kidneys; when the papillæ of these glands were compressed, a milky fluid exuded from the orifices of the tubuli uriniferi. The bladder was empty and contracted. The spleen had nothing remarkable in its appearance: there was no bile in the intestines.

Thus it would seem, since the morbid conditions of the nervous system are too abstruse for our detection, that nothing has been gained by the post mortem examinations, if it be not that a universal venous congestion pervaded the whole abdominal cavity, accompanied by a suppression of the natural secretions. It then appears probable, that the cause of cholera, whatever it be, by diminishing the heart's action, and thus lessening the activity of the arterial circulation, and by producing a torpid venous circulation, perhaps the result in part of the former, perhaps produced by the direct operation of some morbid poison on the nerves, operates mainly upon the abdominal viscera; here it is, as we know, that the proximate causes act in bringing on an attack; and here it is we find developed the most prominent symptoms.

Now let it be understood, that although this pathological view became the foundation of the practice hereafter to be explained, it is not put forth with so much confidence as to limit further researches into the nature of this strange affection. One thing only is insisted upon, that, whatever the remote cause be, that at this particular time, in some circumscribed locations, and not in others, predisposes to the disease termed cholera; the most prominent symptoms are developed in the abdominal cavity, and to that point must we turn our attention, would we arrest the approach of death. The coldness of the extremities, therefore, the profuse sweats, the cramps of the muscles, the cold tongue, the immoderate thirst, &c. are not to be regarded, except as mere symptoms remotely connected with the morbid actions that are going on in the interior of the body.

A natural consequence of diminished arterial circulation is diminished temperature—but if the cause that produced this feeble action, still continue to operate at the centre, how vain must all efforts to arouse action be, when applied to the extremities.

Again, as regards the thirst, since there is neither increased heat nor dryness of the mouth, upon what reasoning or theory do we allow the patient the free, unrestrained use of ice or cold drinks. Is it because he demands them? and is nature always so true in her requests, that we should listen to her? Our patient may be indulged perhaps to his detriment; I have known the water and melted ice, that have been allowed to a patient at intervals during the space of an hour, to be thrown up from his stomach *nearly as cold as they went down*. There cannot therefore be much increased heat in the gastric organ, and we have a right to conclude that the effect of cold and moisture is not demanded, since evident *coldness and moisture* actually exist in the mouth, and in all probability the stomach is in a similar condition. To those who are disposed to



doubt the correctness of the theory here advanced, and who, bound in the chains of former doctrines, cannot give up the impression of an augmented temperature in the stomach, causing the thirst—to all such, let me here make one remark—what is the actual condition of the patient's skin? and what are his feelings connected with that condition? Cold and wet is the reply to the first—insufferably hot, answers the second. Have we not then before our eyes and under our fingers, a cold, moist skin, giving the sensation of oppressive heat?—a phenomenon as yet not understood, and must we of necessity reject the same idea as applied to the stomach; merely because we cannot explain it? Look at the collapsed, dying individual, with a skin like marble, covered with the morning dew—what are his sufferings if attempts are made to confine him under covering? Does he not resist with all his strength, and cry out he is burning with heat? With this fact before me, I am content to say, there is a total destruction of all the natural sympathies in this disease, and referring the thirst, the cramps, and the feelings of heat, to morbid nervous actions, stop my speculations here, and follow that practice which experience proves most beneficial.

The profuse sweats can hardly be called either a secretion or an excretion. Our knowledge of the capillaries is as yet too unsettled to establish any theory upon this point; but when we see those parts of the body most remote from the centre of the circulation, and most deficient in arterial circulation, pouring out these sweats more abundantly as they are more distant, is not the conclusion warrantable, that they are a kind of exudation, coming perhaps from the veins, (which are visibly more congested in the same ratio of distance from the heart,) and not the result of any arterial excitement? Let us now only transfer our attention to the interior of the body—let us admit a condition of the alimentary passages, similar to that remarked upon the skin, and have we not at once, an explanation of the immediate cause and source of the rice water discharges? Here then we unite the various considerations that have become the basis of our pathology and of our treatment of cholera.

The cramps cannot be easily explained. I feel a hesitation in offering a theory upon the subject, and shall defer any further remarks respecting them for the present.

In proceeding now to speak of the treatment, we cannot give a better idea of what has hitherto been done, than by the following extract.

“In each country where this disease has appeared, we find a very different and opposite treatment recommended, as one proved by experience to be the best. In India, bleeding, calomel, and opium, were the favourable remedies. In Russia, a practice as inert as a few grains of the sub-nitrate of bismuth in frequently repeated doses. In England, the mustard emetic. Again, in different countries, remedies contradictory, as bleeding and transfusion, are proposed and made use of in full confidence. Heat applied to the body in every form, as well as the cold affusion. Drinks altogether denied, or ordered in unlimited quantity, both hot and cold. They have attempted to restrain purging and vomiting by the most powerful narcotics, enormous doses of opium; and they have also encouraged them by various emetics and purgatives. Some try to allay the irritability of the mucous membrane; others goad it with the most powerful stimulants, ardent spirits, and ammonia. Others place their reliance chiefly on the mild alkalies, soda, and magnesia, to neutralize some imaginary agent; and, again, some indication has been found for acids; whilst many have trusted a trifling carminative, as essence of mint, or cajuput oil, to combat these alarming symptoms;—illustrating the remark of Sir William Crichton; ‘it is a most melancholy confession, but one not the less true, that after cholera has spread its devastations from Ceylon to Archangel, from Oranburg to Berlin, we are almost as far from a rational *modus medendi* as we were when it first appeared on the banks of the Ganges.’”

Here is a summary of medical authorities upon the best mode of treating cholera. Uncertain as has always been the science of medicine, our records do not show any thing quite so extravagant as this—for although different systems of treatment and different theories have, in succession, each had its turn, it is something new to see so many put forth at one time, and each one supported by such high authority.

There is so much in a name, that we consider it of some importance to settle the question as to the proper appellation by which to designate the disease, before we apply a remedy. The term "cholera" has been now so much sanctioned by general adoption, that no other would be understood—but has not injury resulted in the present case, from the too ready adoption of a loose term. Who would have prescribed opium so liberally in this disease, had it not been for the name—cholera morbus!

"Cholera," or "cholera morbus," has always meant a disease of the stomach and bowels, generally of a bilious nature, and accompanied by a sense of internal heat, and griping, pains, &c. It arises from solar heat, or from the irritation of some indigestible matters, and very seldom terminates fatally with us. It is scarcely known except in warm climates, and in the hottest seasons. Here, on the contrary, we observe a disease, characterized by a total suppression of the biliary secretion. Some of the worst cases have neither vomiting nor purging to any great extent. Most alarmingly and rapidly fatal, and pursuing its course in all climates, and at every season. The one is generally sporadic, often accidental—the other an epidemic, enjoying a limited reign. A minute comparison need not here be entered into—any medical man is competent, at a glance, when he sees the disease, to learn more than pages can convey.

But we must have a name. It is thought by many to resemble the cold plague, which prevailed in the southern parts of this country. Perhaps it does resemble that disease, but that is all. If a term were wanting to express what seems to be the fact, we would rather call it a *congestive fever*, and no injurious consequences will result, for as the name would be in a measure new, the treatment would rather be selected for it in particular, than derived from another affection perhaps totally different.

Allowing this cholera to be a disease of a typhoid character—granting it to be connected with an almost universal congestion of the venous system, and not inflammatory, what are the indications? These appear to me to be several and distinct, and that the whole success of our practice will depend upon the manner and the order in which they are met. Let us first review the symptoms of a man in the state of collapse. He is either pulseless or nearly so. The extremities are icy cold, and checkered with large drops of limpid water, collecting as fast as they are removed; the fingers corrugated, the nails blue; the tongue and breath chilled, and the thirst painfully urgent. To these add in most cases violent cramps of the voluntary muscles, purging of an almost colourless fluid, and the rejecting from the stomach of every thing swallowed. Apparently the cold extremities, the vomiting and the cramps, are the most urgent, and therefore the first to be removed, and hence hot applications, frictions of various kinds, anti-emetics and opium, seem so natural a prescription, that it is difficult to resist their employment. The real disease is not studied, the symptoms alone lead every one astray. To relieve the spasms and check the vomiting and purging, nothing is more natural than large doses of opium. To restore the temperature of the skin, cold and damp, who would not resort to heat and stimulating frictions? The want of success in this treatment leads to the trial of something else, combining perhaps some one of those remedies, (generally opium,) or else excluding them all, and standing forth with all the presumption of a specific.

Let us now take up the indications under a different view of the disease. Supposing the venous congestion be proved to be the immediate cause of those symptoms, viz. that the morbid cause having diminished the power of the heart, (whether through the nervous system or not we need not stop to inquire,) the



arteries as a consequence carry less blood than usual, must not the remote parts of the body, under such circumstances, first feel the want of their accustomed supply? The coldness of the skin then is merely a symptom, an inevitable consequence, and as such it should not be regarded in our treatment. Again, grant that a diminished arterial circulation throughout the abdomen, produces there a state of things similar to what is witnessed without, ought not the same results to ensue, namely, a diminished temperature, a loss of tone, and suppression of natural or healthy actions? How futile then all attempts to arrest the vomiting and purging, by ordinary means, such as opium, &c. These symptoms are merely the natural results of the grand cause that is still triumphantly operating, and if they, as such, are permitted to attract our attention, are we not thus decoyed away from the main object? If this position be true, the rice water discharges pouring from the rectum, and the fluids thrown from the stomach, are worthy of no more attention than the dew-like drops that collect upon the skin. But let it be remembered the stomach is an organ, possessing a higher degree of vitality than any other viscus of the abdomen, and that the distention and consequent loss of tone in it, must exercise a greater influence over the whole system, on which account its immediate restoration becomes a matter of the first importance. I conceive then this organ to be in a state of *flabby distention*, if I may so speak, to have all its veins highly distended with blood going through a torpid circulation, its arteries contracted and enfeebled in the same ratio, and having a diminished temperature. If it be true, that through the medium of the stomach, we must hope to act upon the rest of the system, it behooves us first to prepare this organ for so important a duty; we must arouse its energies ere yet it be too late; we must bring on the tonic contractions of its muscular fibres; we must expel this black venous blood, and endeavour to restore the arterial circulation to its natural superiority. What can do this but an *emetic*? We have no common cholera morbus to deal with, and would have nothing to fear in the use of such a remedy if we had. The choice of an emetic is, however, a matter of some consequence. The mustard I have never tried; all our common emetic medicines are either slow and uncertain, or else violent and dangerous. The Russian practice suggested the salt, and experience has proved it precisely what in every respect I would have it. My first course then is to dissolve two large spoonfuls of common salt in a pint of water as warm as the patient can bear it, of which a tumblerful is given at once. Almost instantaneous emesis results, and generally some retching follows; if however these are not sufficiently well effected, that is, if it appear probable that the stomach has not completely contracted, another tumblerful is given and our object attained.

The evacuation of the stomach is not the only advantage derived from an emetic. Nothing in these cases excites the heart to action so certainly as the retching that accompanies the act of vomiting; where stimuli have failed to make the slightest impression, the effort of vomiting has instantly restored an extinct pulse. But most of all, this operation is followed by a less irritable stomach, and if caution be observed subsequently in regard to drink; no vomiting of any consequence will return. Thus we accomplish the grand objects of the first remedy; and so far as I have as yet observed, if the salt fail to excite vomiting, the case is desperate. Immediately after the emetic, perhaps in five, ten, or fifteen minutes, twenty grains of calomel for an adult, mixed with a little white sugar, are placed in the mouth dry, and washed down with some cold water. This medicine is given at this time, not with the expectation of any immediate effects, but with a view to its subsequent operation. Ten grains are then given at intervals of an hour, until often a drachm or more is taken. If reaction come on, the calomel is immediately stopped, as every object will be attained when the system is so far restored as to receive its influence. It is then the ulterior effect upon the secretions that makes its early use important, especially as it does not interfere with the other remedies next to be mentioned. It is now clear that thus far only one indication has been answered, viz. that of restoring the



stomach to a more natural condition. The next important object is, to do for the rest of the system what we have done for the stomach, that is, to overcome or remove the universal venous congestion, but of course by a different means. For this purpose, there is no substitute for venesection, and the blood must be drawn from the veins. It will not do to open an artery; this exhausts the patient, but does not relieve the venous congestion. In this respect, perhaps, we have an exception to all other cases; *we must then open the veins.* If the pulse is not perceptible, or if it be very feeble, it is better to begin by applying cups over the whole abdomen, and then if the pulse rise, we may open a vein in the arm or in the foot, and watching the pulse, let the blood flow until reaction or the improved condition of the patient indicates the attainment of our object. As regards bleeding from the arm, unless the pulse be full or hard, and there are violent spasms, we should be cautious not to resort to this practice too indiscriminately. I have seen it do harm, where a vein has been opened before the habits of the patient or the real object of the operation has been consulted. Although the pulse from the beginning has in some cases been so good as to bear a free bleeding, it has generally been necessary to resort to cupping before the restlessness and anxiety, (attendant upon the abdominal congestion,) have been relieved. For, the tossing about, the feeling of fulness and uneasiness, seem to me all to depend upon this torpid congestion of the abdominal viscera. Although not always attainable, especially in country practice, a valuable adjuvant is obtained in the application of leeches to the epigastrium, but more particularly to the anus, for here we come directly to the point and draw blood from the abdomen. The next thing to be done, to retain the ground we have thus gained, is to apply a large blister over the epigastrium; and if we succeed in producing inflammation on the skin, (vesication is not necessary,) our patient may be considered in most cases convalescent. These are the grand principles of our practice founded upon the pathological view of this disease now offered to the medical profession in these remarks. But there are some other matters to be attended to, of no small importance.

1st. The nausea and occasional return of the vomiting; to relieve this, the effervescent draught, taken in a state of effervescence, and made in preference with fresh lemon juice, or a little cold soda water, to which have been added ten or fifteen grains of sup. carb. soda, with ginger syrup, will prove most effectual. But do not let the patient indulge his desire for drink too freely. At this time it would appear that the pyloric orifice is obstinately closed, and absorption goes on so slowly in the mucous membrane of the stomach, that ultimately vomiting ensues as the only means nature has to relieve herself of an oppressive load. To illustrate this observation by a fact, I will mention a circumstance that occurred in one of our most malignant cases.

A boy, aged sixteen, was slowly recovering from a state of collapse, on the practice which I had instituted in the hospital. During my absence, an ounce of castor oil, with a drachm of spirit of turpentine, was given with a view to purge. This was taken at 3 o'clock in the afternoon. The whole of that night he was in a precarious state, and we were obliged to give him stimuli. Next morning at 8 o'clock, seventeen hours after its exhibition, this medicine was vomited from the stomach. This case will be more particularly detailed hereafter.

2d. The thirst is so urgent, that it seems cruel to refuse the patient every drink, and yet it becomes our painful duty to restrain him in the gratification of his desire. With this view, ice is generally allowed, but in very small quantities. I prefer much limiting the patient to the use of cold water as a gargle, and have generally been highly gratified to see him, when made aware of the danger of swallowing so much water, amuse himself with both pleasure and relief in washing his mouth. The sensation of thirst in this disease appears, as already stated, to be entirely a morbid nervous feeling. The tongue and mouth are cold and moist, a condition directly opposite to that generally accompanying thirst, and we have no reason to suppose that there is any increased tempera-

ture in the stomach to cause it, as the observation already made would go to prove, since as then remarked the water which was thrown from the stomach was still cold. Would not hot drinks taken into the mouth, by restoring a natural action, tend to remove an unnatural condition?

If the patient be not an habitual drunkard, or have not any chronic affection of his viscera, this course will generally succeed in bringing on reaction, or to speak more correctly, in allowing reaction to come on. We first discover the doughy condition of the skin, replaced by a natural elasticity, so that if we pinch it up, it immediately retracts. This change is first noticed on the thighs and shoulders, whence it gradually progresses, to the remotest points, until life once more seems universally disseminated; at the same time, the profuse sweats cease, and the surface, without becoming parched as in a hot fever, presents a natural degree of warmth and dryness. The thirst also disappears, an effect, in part perhaps, of the calomel, as I have seen it relieved before the tongue had regained its warmth.

3d. We said nothing respecting the constant purging in our treatment, because we consider it merely as a symptom. If, however, the stools are copious and frequent, more as a matter of convenience than from any idea of their suppression benefiting the patient, the following injection is thrown up the rectum:—To one pint of cold water, add, acetat. plumbi, ℥j.; laudanum, ℥j.—one-half to be first used, and if rejected, the remainder. This will arrest the purging. It is more than probable that it extends its influence further than the large intestines, with which it comes in contact, for it has generally been remarked, that no discharges have come away, after the use of this injection, until the calomel makes its appearance, escorting the bilious matters, the harbinger of our patient's recovery. The stools, it may be well to remark here, which make their appearance from twelve to twenty-four hours, or even later, after the exhibition of calomel, are very peculiar. They are thick and of a bright green colour; so much so, that they are familiarly termed the "spinage stools." The improvement of the patient after this takes place, is remarkable.

4th. Respecting the cold extremities, as already stated, we do not regard them as a matter of consequence, in the treatment of the disease. Warmth is generally applied to the feet, legs, and thighs, by means of bags of hot sand or salt, but with another view; nor have I as yet had any reason to suppose they have ever assisted in bringing on reaction; yet it must be acknowledged, that they aid in its accomplishment when once it has commenced, and if used in time may prevent or protract the approach of the collapse; for then there is still vitality enough left to feel their influence; but what can we expect from heat applied to a surface, as it were, dead, and insensible? In fact, have we not all seen in these cases, continued frictions, fail to excite the slightest warmth, although evident redness appeared upon the skin?—and have we not all seen hot applications impart their heat, only as they would to a block of wood, which feels it not, and loses it as easily as it was received? An exception has been hinted at—it is in cases where the cramps are very severe—heat applied to the muscles, and dry rubbing with the hand, have proved highly beneficial in relieving the cramps, which are often so distressing as to cause the patient to cry out. The relief is so marked, that he will tell you where to place the hot bags, and beseech you to recur to the rubbing.

Some observations upon the employment of stimuli may not be out of place here. The practice which has now been recommended, is essentially *non-stimulant*, and yet it will, under certain circumstances, admit of the employment of stimuli. These are in cases of drunkards, and of relapses, after a moderate reaction. In the first, during the employment of the cupping, the calomel, &c. if the patient do not very soon show some amendment, it is advisable to resort to something that will aid a debilitated stomach in coming up to its proper standard of sensibility. Hence, a strong infusion of Cayenne pepper and cloves, a table-spoonful of each to the pint of boiling water, to which, in some cases,



may be added a little of the spt. camphoræ, act as a cordial stimulant, highly beneficial. Of this tea, he may take one or two table-spoonfuls every ten minutes, being allowed afterwards to rinse his mouth with cold water, but not to swallow it. The quantity allowed must be regulated by the effect upon the pulse. In addition to this, or sometimes as a substitute, hot brandy-toddy may be given. The carbonate of ammonia is apt to excite vomiting.

In the second case, viz. where a patient has been aroused from the torpid state of collapse, and has had bilious evacuations, showing a return of arterial action, if arising from previous debility, neglect, or feebleness of constitution, he again begin to sink, the same or milder stimuli, in smaller doses however, may be used to advantage.

In some cases of this nature, the essence of beef, seasoned with salt and Cayenne pepper, is very grateful, and restores the strength. In regard to the diet of a patient recovering from an attack of this strange affection, it is difficult to name any article that the patient will express a desire for; and in the more malignant cases, he will lie, for several days, in a state almost resembling that of the hibernating animals—he wants nothing—complains of nothing—and feels nothing. If watched carefully during this time, and the indications are met as they arise, there is no danger to be apprehended; nature will at length speak for herself; and as far as I have observed, it is generally safe to gratify the particular whim of the patient in any little matter he may desire. Hot green tea is often highly grateful; cold lemonade, barley-water, chicken-water, oat-meal gruel, sago, arrow-root, mush and milk, &c., may afford us a choice, that will meet the wants of almost every case. But, one thing ought to be remembered, as a general rule, that until the restoration of the *biliary and urinary secretions*, no nourishment can be wanted, and none should be allowed. The truth of this is evident in the fact that it is seldom or never called for by the patient, and his friends had better not anticipate the call. Before concluding these remarks, I will insert from the day-book the comparative results of the practice pursued, under the direction of the physician-in-chief, in the hospital, prior to the adoption of my practice, and of that which I introduced, upon the principles before explained. From July 27th to August 6th, fourteen cholera patients were received into the hospital; of these, five were cured\* and nine died. From August 7th inclusively, to August 21st, twenty-eight cases occurred; of these, twenty were cured, and eight died. Both computations have been made, by excluding all cases not choleric, and in each some of the cases were moribund when received.

A few cases have been selected, and are here inserted to illustrate more clearly the course of our practice, based upon the congestive view of this disease.

Early on Sunday morning of August 5th I was called to see a woman who had been taken with the cholera in the street. With some difficulty she had at length been received into a house, where I saw her. Her symptoms were, rice-water evacuations, continued vomiting, and cramps of the legs and arms. The pulse was small and contracted, but the blue stage had not yet arrived, nor were the fingers shrivelled. The tongue however was cold; I bled her upon the spot about twelve ounces, and sent off for the carriers to convey her to the hospital. About an hour after I arrived there, and as I had commenced the treatment the case was left solely to my direction. I found her worse: the collapsed stage was fast progressing; the pulse weaker; the fingers beginning to show the corrugated appearance, and the vomiting continual. I immediately gave her the salt emetic, which produced excessive retching and painful efforts for some minutes. These at length ceased, and twenty grains of calomel were exhibited. For a time the stomach remained tranquil, but again the disposition to vomit returned. To relieve which the effervescent mixture was given in small quantities, and occasionally small pieces of ice. In one hour after the

\* Including two cured by my treatment, being my first two cases—one of which will be detailed.



first dose of calomel, twenty grains were again given. Between these two doses, as the pulse had improved after the vomiting, cups were applied over the whole abdomen, and a few ounces of blood extracted. A large blister was then applied over the abdomen, from the navel to the top of the epigastric region. Ten grains of calomel were exhibited hourly until sixty were taken in all, hot sand bags were also placed to the lower extremities. Thus, she was left to await the effects of what had been done; taking nothing but ice, and occasionally soda water, or the effervescent draught. Towards the latter part of the day her appearance was so unfavourable, that every one who saw her felt persuaded the result was no longer doubtful, and predicted her death that night; I was sanguine, and had hopes; I had seen how rapidly patients sink when once in the collapsed state, if not likely to recover. She had still some pulse, less vomiting, was less urgent for drink, and what was more important than all, the *blue face* and distended veins were not remarkable. I therefore did not regard the cold, wet and shrivelled hands, the almost extinct voice, and the general bad appearance. In this state she passed the night, when towards morning an evident improvement was discovered; reaction began to appear about the neck, shoulders and thighs, and my patient's eyes were brighter, and her lips of a better colour. The improvement was slow; in the course of this day the spinage stools were discharged, and she was convalescent. The next day salivation came on, which proved troublesome. She recovered entirely.

The next case in which I put in practice this treatment, occurred in the hospital on the 7th of August; but as the patient had not fallen into the collapsed state, and recovered without difficulty, no particulars are necessary.

The result of these two cases made me anxious to put my views to a further trial, and on the 8th the opportunity occurred in the person of a German, whose treatment and condition were observed by many physicians and students visiting the hospital constantly. The circumstances under which he came under my care are briefly these:—

He was attacked about 5 o'clock in the morning, and brought into the hospital at 8.

I arrived there at 9, saw him undergoing treatment, but did not interfere. The only medicine prescribed, was a mixture of magnesia, spirit of camphor—and chloric ether—with water. About half past ten, as the physician-in-chief was leaving the bed-side, I stopped, and asked his permission to treat the case. He replied—"It is not a *fair case for you*—the man is moribund." He, however, left the hospital, without ordering any thing for him, and appeared to assent to my request. I then approached the patient, and found him cold and pulseless, covered with large drops of cold sweat, restless and tossing about his bed; he spoke in a whisper scarcely audible; he had no urinary discharge, but occasionally the rice-water evacuations; the hands and feet blue, and marked by distended veins. I am not prepared to say what was the colour of his lips, but the whole expression of his countenance was so bad, that a single look would convince us he must die.

Such was this man's condition when I ordered the nurse to prepare the salt vomit. It was taken through some persuasion, and nearly the whole pint swallowed. In one minute vomiting began, and brought from his stomach an enormous quantity of fluids which he had taken. The retching and fruitless efforts that now followed were so severe, and his exhaustion seemed so great, that I stood, anxious for the result. At length he became composed, and upon taking hold of his wrist, to my great gratification and relief, there was pulse. Let it suffice now to say, that from this time, his pulse did not leave him, and that vomiting did not return. The calomel was the next step, and this was not spared. He began with one scruple, and took in the course of the day at least seventy grains. Cups were applied to the abdomen; they drew blood, and his pulse rose. A blister was next applied over the epigastrium. The effervescent draught, occasionally a little ice, and rinsing his mouth with cold water, comprised all the treatment that followed. It was not until evening that

his condition was much improved. From this time, he recovered, but very slowly; large quantities of spinage stools came away the next day, at which time also the urinary discharge began to return. In a few days he was sent out to the convalescent hospital, and was restored to perfect health, without salivation. A curious eruption appeared upon his skin, during his convalescence, which in a few days disappeared.

One other case will now be detailed, to explain the treatment in those which relapse. This occurred when the practice of the hospital had become established, and trials had been abandoned.

A most unfortunate family residing in Lombard street, near the Schuylkill, consisting of a man, his wife, and seven children, became the victims of this disease, to an extent seldom equalled.

An infant, two months old, was first attacked—it died; and the mother returned from the funeral much fatigued; she went to bed however as well as usual, and about 2 o'clock in the morning was attacked with vomiting and purging; about the same time, two sons, one fourteen years of age, the other sixteen, became affected. Between 8 and 9, she was brought to the hospital, in the last stage of collapse, and died in three hours:—while she was breathing her last, three of her sons arrived in succession, two with the cholera, and one with a chronic liver affection, very much exhausted. Our attention was now directed from the dying, to the relief of those for whom there was hope. The boys affected with cholera, were vomited, cupped, blistered, and treated with the calomel in the usual manner. Francis, the elder, was just getting into the collapsed state when this course was commenced; his skin had an unfavourable character—it was almost universally *doughy* and cold; and the blood in the veins seemed to get along with much difficulty. The countenance also had an unfavourable aspect; his fate long stood doubtful, but he got through that night, and with the exception of cold hands and feet, seemed to have passed into a state of partial reaction: bilious stools had been discharged; thirst had very much diminished; the elasticity of the skin was restored to the parts immediately connected with the body, and his pulse, although not strong, was quite apparent. Soda water, small pieces of ice, and the effervescent draughts were ordered to be given occasionally; and through the morning he took some small doses of calomel. About 3 o'clock, during my absence, he was ordered, by the physician-in-chief, an ounce of castor oil, with a drachm of spirit of turpentine, as he appeared to be sinking. During the evening, it being then my term of duty, it was discovered that he was almost pulseless; that the skin had got colder; his tongue again cold; his respiration bad, and his whole aspect quite as unfavourable as at the commencement of his treatment. Under such circumstances, stimuli were indispensable. The Cayenne pepper tea, warm, was immediately given at intervals, and he was carefully watched through the night, taking also, some other stimulant not now recollected. At 3 o'clock next morning, he vomited, and threw up the oil he had taken the day previous, and also the drinks he had swallowed in the intermediate time. This oil must then have lain in his stomach seventeen hours. The vomiting, however, did not seem to depress him; the stimulant practice was continued. Towards evening he again relapsed somewhat, the bilious stools having disappeared, and the pulse flagging; more active stimulants, given with a more liberal hand, a third time raised him. During this day, he also took occasional doses of calomel; sometimes five grains; sometimes two grains. The exact amount of calomel he took, is not known, as in the hurry of the moment, no notes of the cases were made. The whole history, as here detailed, is correct in the main points, although the minutiae are not recollected. It was during this day, that we learnt from his brother, for the first time, that Francis had been accustomed to take a few small glasses of spirits, when at his work in the brick-yard, although not in the habit of getting intoxicated. Great attention in regard to his pulse, and to the regular supply of the stimuli, kept him up and he finally recovered. It was for four or five days after this, that he laid torpidly on his bed, with a good



pulse, bilious stools, clean tongue, and in a good state of reëction, but unable to take any article of food whatever. He was just commencing the use of quinine, when he left us for the convalescent hospital. No salivation was produced by the large quantities of calomel he took. There was something very extraordinary in the poison that produced the disease in this family. The brother, affected with the liver complaint, was emaciated to the last degree, and died under choleric symptoms in a few days. The other brother, with cholera, was obstinate and slow in his recovery; and a sister only five years of age, who was brought in two days after Francis, was in a doubtful state for a week, but she also at length was restored to health. Two others of the same family, a girl about fifteen, and a child of four years of age, were conveyed to another hospital, and in spite of all efforts died. Thus in one house five out of eight, attacked, were hurried to the grave in a few days. The father was the only one not taken sick, and of the eight that composed his family circle, only three now remain. It may be well to mention, that by reference to the book of cases, it is found, not a single case of cholera terminated fatally after the adoption of my system of practice, except confirmed drunkards, and those who were brought in too late; that is, in what is termed the blue stage, and two of these last had been treated by opium previous to their arrival. By the blue stage is understood, that condition of the venous system, which with a sunken eye gives to the face a peculiar dark expression; the veins on the inside of the lips are filled with dark torpid blood, and those on the extremities are in a similar condition. It is always accompanied by great jactitation, oppression, and complaints of excessive heat. It is in fact a state of gradual death.

So much success has been claimed for the saline powders, that, although I feel totally unable, as yet, to explain their mode of operation, it may be well to add the prescription, as it may perhaps become an adjuvant to the practice here recommended. It will, at least, leave it to the judgment of the practitioner, to select so much of each course as may meet the indication of any particular case.

R. Sup. carb. sodæ, ℥ss.  
 Muriat. sodæ, ℥j.  
 Chlorat. potassæ, grs. viij.

To be taken every hour in a little water.

Thus we have attempted to place before the profession a pathological view of this disease, formed perhaps upon too limited experience, but connected with a system of practice, at least consistent with the principles that have been advanced. "*The cholera*" is rapidly spreading in all directions, so that if any benefit is to be derived from a new course of treating it, let it be made public at once, in a crude form, rather than retained for polishing, to stalk forth at length, in all the pride of a fine dress, when, alas! the grave has closed upon thousands, and all around is sadness and mourning.

*Letter from Dr. C. A. LEE, of Greenwich Hospital on the Treatment of Cholera.*  
 —MR DEAN DOCTOR—Your letter of the 20th came yesterday.—I am excessively hurried, and cannot write you as I would wish. As to our treatment, I trust we have at length hit upon a plan which leaves nothing more to be expected in the way of therapeutics. In the early stages, our practice is not peculiar; we have employed the usual means, and our treatment has been uniformly successful. It is only in the stage of collapse, in which most of our patients are brought in, that we have experienced any difficulty. At first we relied on powerful internal stimulants and external revulsives; but our success was small, no permanent reëction could be produced. Inhaling the nitrous oxide and oxygen gases had no better effect. At length I concluded that there was no absorption from the mucous membrane; that from the violent action it had undergone, its functions were lost, and brought into the same condition as that of the skin. The coldness of the tongue, and the fact that hot injections were returned cold, gave great probability to the correctness of this pathological view. The only



thing then left, was to undertake to introduce medicines into the circulation, mechanically through the skin. The indications were to restore the circulation, relieve spasm, promote the action of the absorbents, and unlock the secretions. To effect these objects, we prepared the following mixture.

R. Strong mercurial ointment, 1lb.; powdered camphor,  $\frac{1}{2}$ lb.; powdered Cayenne pepper,  $\frac{1}{2}$ lb. Mix well together, and have the patient rubbed all over for half an hour at a time, and repeat the operation accordingly, till the mouth is affected. The success of this plan is perfectly astonishing. Without administering a particle of medicine internally, reaction is sure to follow in from one to three hours, even in the most perfect collapse; the secretions begin to return, the evacuations become bilious, and the patient expresses himself perfectly relieved. Since we began this plan, more than two-thirds of our patients have been cured—a large proportion of the rest were in a dying state when brought in. I believe the mercury is rubbed mechanically into the pores of the capillary vessels, and thus taken into the circulation. We invariably affect the mouth in from four to ten hours—then the patient is generally safe. We have lost but two where the gums were affected. In the course of my professional life, I have never been so gratified in the effect of remedial agents. The greatest sceptic in the usefulness of our science, would yield to the demonstration of such facts as our reports present.

CHARLES A. LEE.

To Dr. L. A. Smith, Newark, N. J.

*Two Cases of Accidents, from Admission of Air into the Veins during Surgical Operations.* By JOHN C. WARREN, M. D. Professor of Anatomy and Surgery in Harvard University.—Some professional men have expressed doubts as to the accidental admission of air into the veins during surgical operations. Such doubts appeared well founded when the occurrence first attracted the attention of surgeons; especially on considering that veins about the neck were so very often wounded in the removal of tumours; and that some of them, as the external jugular, are frequently opened for the purpose of taking blood, without any unfavourable consequences.

Not long since I had evidence of the existence of such cases in two of my own patients within no great distance of time from each other. The certainty of such accidents and the possibility of their frequent occurrence, have led me to consider it a matter of duty to state them publicly, for the satisfaction and government of other surgeons. It seems to me remarkable, that nothing of the kind before occurred in my own practice, nor in that of my father and predecessor in a long and active surgical career.

CASE I.—Mr. William Burrill, of Salem, aged 60, was admitted into the Massachusetts General Hospital on the 16th Oct. 1830. He had a cancerous affection of the left side of the face and neck of the extent of three or four inches diameter. It was hard at the edges, of a livid red colour, ulcerated in the centre, very offensive, very painful, and had made an impression on the general health. The parotid gland, the submaxillary, the sublingual, and all the textures excepting the bone, were involved in the complaint. The lower jaw itself was thought to be diseased at first, but it afterwards appeared that it was not so. In so bad a state of things, I felt very little hope of being able to eradicate the disease, and would not have attempted any operation, had not the patient solicited it.

Considering the extent of the disease, that important blood-vessels would be divided, namely, the facial and sublingual arteries, probably the temporal and even the external carotid, I thought it best to begin by securing the carotid trunk. An incision for this purpose was begun opposite the thyroid cartilage and carried two inches downwards. The platysma muscle was divided; the edge of the mastoid exposed and dissected. Thus far, only a few drops of blood were discharged. The face of the sheath of the great vessels was a little uncovered, when a small effusion of venous blood appeared under the knife, and checked the operation. At that instant a very distinct sound was heard, like

the passage of air through water. A few bubbles were seen in the venous blood, the flow of which was immediately arrested by applying a finger on the part. The patient exclaimed, "I am faint." On regarding his countenance, it was not pale, but livid, almost black, and the muscles agitated by a convulsive motion. The respiration became deep, laboured, and stertorous like that of apoplexy. Committing the compression of the vein to Dr. Hayward, who assisted me, I examined the pulse at the wrist, found it distinct, but very slow. The wound not bleeding, and very little blood having been lost, I directly opened the temporal artery, and the blood poured from it with great freedom. As it flowed the respiration became more frequent and less laborious; the pulse at the wrist more natural. The leaden colour in the cheeks assumed a reddish tinge; and the alarming character of the symptoms was evidently diminished. About twenty minutes elapsed during these changes. At the end of half an hour I judged it safe to remove the patient to his bed, where he lay in a state of insensibility for two hours; at the expiration of which he awaked as from sleep, still breathing like an apoplectic. The night was passed without any accident, and on the following morning he was as well as usual, with the exception of a moderate soreness over the thorax, and a head-ache.

In seven days after the accident described above, the operation was performed without tying the carotid artery.

The diseased parts were included in an elliptical incision, extended from the lobe of the ear to the upper part of the neck, and including the submaxillary, the sublingual and parotid glands, all of them in a morbid and disorganized state. The os maxillare inferius was not diseased. The hemorrhage was copious; but readily arrested, with the exception of that from a large vein, which from its depth, under the jaw, could not be distinguished so as to admit the application of a ligature, and was therefore compressed by a sponge. The veins below the wound were compressed by Dr. Hayward during this operation. The patient experienced a slight faintness, which soon passed off. He had no bad symptoms, and on the 10th of December the wound being nearly healed, he requested his discharge which was granted.

CASE II.—Nancy Bunker, of Trenton, in Maine, married, her age 33. Three years since she noticed a hardness in the right breast, which increased till it involved the whole gland in a tumour, very hard, moveable, yet obviously connected with the pectoral muscle by a morbid adhesion. The nipple is drawn in. The axilla is occupied by a considerable tumour of a globular form, and quite hard. The disease has been accompanied during the last year with very constant lancinating pains. The patient is desirous of an operation; has a strong conviction that she shall not recover; yet is perfectly tranquil and resigned.

On a careful examination of the tumour, it seemed that the whole of the diseased parts could be removed, and it being thought that the patient would thus have a chance for life, and that if the disease reappeared her sufferings would be less than if the gland were allowed to remain, the operation was performed on the 24th December, 1831.

The patient sat in a chair. The right arm was extended, raised above a horizontal line, in order to give tension to the skin, and permit access to the armpit—and was supported in this position by an assistant. The skin on the surface of the breast, with the diseased nipple, were included in an oval incision, the breast was dissected from the pectoral muscle and left connected with the axillary glands while the extirpation of these glands was effected. As they adhered to the great axillary vessels they were cautiously detached by dissection, and by insinuating the finger where the cellular substance was loose, between the tumour and the great vein. This separation was nearly effected—only a slight connexion still existing at either extremity of the tumour. Proceeding to separate it, at the outer part of the axilla, a vein was divided and a small quantity of venous blood discharged. This obscured the parts at that point, and the knife was therefore carried to the other extremity of the tumour. Scarcely was this done, when the patient struggled, and on regarding her I



perceived her complexion to be a livid pale colour, and at the same instant the bubbling or clucking noise was heard, though indistinctly, but the place from which it issued was not visible, the surrounding skin and fat having fallen over it, at the moment of the transfer of the knife. Directly, the axilla was compressed—the patient became insensible, breathing in a distressed manner as in apoplexy. The tumour was at once separated. The posture of the patient was changed, and she was supported by those around. Some brandy was poured down, and ammonia was introduced into the nostrils. The pulse however became less distinct every instant. Cloths dipped in hot water were thrown over the extremities. Strong frictions were applied to the chest and to all parts of the body. Considerable quantities of brandy were again poured down the throat. At this moment the livid colour of the cheeks gave place to a suffusion of vermilion red, and no glow in the cheek of a youthful beauty ever gave one so much pleasure as that flush. I was turning to the class, who watched the different operations with intense anxiety, to say, the “danger is over,” but checked myself and continued the efforts. But the flush soon passed off; the lividity reappeared; the respiration became more feeble; pulse at the wrist scarcely perceptible; and notwithstanding the redoubled applications of external heat and moisture, the extremities and the whole body cooled rapidly, and presently the respiration ceased.

As a last effort, I opened the larynx and put in operation the inflation of the lungs by a bellows, in a very speedy and perfect manner—imitating the movements of inspiration and expiration with great exactness—continuing the general application of heat and frictions to the whole surface. These administrations were continued for about twenty minutes longer, without any encouraging appearances. At the end of this time, I perceived there was no remaining hope of the restoration of my patient to life. The friends being anxious to take advantage of a vessel then sailing for their home, the body was soon after removed, and no opportunity afforded for examination.

The effects of the entrance of air into the blood-vessels appear to have been known to Lieutaud, Morgagni, and other distinguished pathologists; but the danger of such an occurrence in surgical operations does not seem to have been adverted to, until the operation of M. Dupuytren, in which the admission of air through the external jugular proved suddenly fatal. Since the publication of this fact, the occurrence has presented itself to many surgeons in Great Britain and this country.

A natural scepticism in regard to these accidents has arisen from not considering the peculiar action of the auricles of the heart. Now, it is asked, can air force itself into the veins, which are already filled with blood, and at the moment this fluid is discharging itself from an aperture in the vessel? The possibility of the accident will however be admitted, on recollecting that the auricles act not only like an expelling syringe, when they drive the blood into the ventricles, but that they have the power of suction, when they dilate themselves, thus sucking the blood from the two cavæ, and of consequence from the great veins connected with the cavæ. This suction power of the auricles explains what would otherwise be unintelligible, the movement of blood through the large inactive veins near the heart.

There remains another difficulty. Why do not the sides of these veins collapse when the blood is pumped from them by the auricle? and if they do thus collapse how can air be drawn in through a small aperture in one of these vessels? This objection has been removed by M. Bérard, who has shown that the large veins near the heart are protected by fasciæ, connected to the coats of the veins by cellular substance. The fasciæ themselves are attached to bones, in such way as to prevent their collapsing on the veins. Further, it may sometimes happen that the coats of a vein assume a morbid structure which gives them an unhealthy rigidity, and in this manner prevents their collapse. This occurred to M. Dupuytren, as I am informed by my friend Dr. Lodge, who was



in Paris at the time. M. Dupuytren, being about to divide a large varicose saphena vein, expressed some apprehension that air might be admitted and that the result would be fatal. The vein was divided, the peculiar sound of the entrance of air was heard, and the patient expired.

In the first of the cases above related, the vein opened was a small vein crossing the neck from the median external jugular to the great internal jugular. At least I presume this to have been the vessel; though there can be no certainty of its identity, the incision in the neck being small; the parts not much uncovered, and the sheath of the internal jugular not opened. This small vein, stretched across the neck, was kept tense by its attachment to fixed veins at each extremity, and would thus be in a favourable position for the admission of air on the suction of the auricle.

The vein opened in the second case was the subscapular. It did not seem to be large, though perfectly visible before it was cut—and the point of the incision was at a sensible distance from the great axillary vein—say nearly an inch. The dissection had separated it from the surrounding parts in a considerable degree. The axillary cavity was extensively dissected; so that the attachments of the fasciæ covering the great vein must have been much relaxed.

Here then was a small vein, at some distance from the heart, dissected from the surrounding parts; and its receiving vein also dissected. The coats of the vein were not visibly diseased. The explanations of M. Bérard will not therefore apply. The cause of the phenomenon in this case is to be sought in the position of the arm. The limb was extended and elevated; in consequence of which, the axillary vein was in a state of extreme tension. The subscapular vein was also kept tense by the chain of axillary glands and by the weight of the depending breast; for this organ had not been separated from the glands, in order that they might be drawn down by it and exposed.

The possibility of these accidents under circumstances like those above, where there could be so little reason to fear them, must be a cause of anxiety to operators, in the removal of tumours from the neck and arm-pit; and I know of no effectual means to guard against them. Pressure on the vessels intervening between the disease and the heart would often be impracticable; and where it could be applied, the tension of the fasciæ would generally render it abortive. Causing the patient to expire the air from the lungs could only be practised for a moment. Change of position, by relaxing the vessels, would do something; yet the state of tension must in many cases be resumed, in order to carry on the operation. The immediate compression of the vessel on the appearance of the accident, might sometimes save the patient from death, though not from very threatening appearances. For in the first case the patient's life was preserved; but although the accident was instantaneously arrested, he was saved with difficulty.

On a view of all these considerations, it appears prudent to suspend an operation in the vicinity of the heart, at the instant of appearance of venous blood from a suspicious point; and to compress the vessel, that time may be had for observing whether dangerous symptoms are likely to arise, and if these actually appear, we should directly resort to the means spoken of. First, compress the orifice of the bleeding vein with the utmost care. Second, apply pressure on the veins between the wound and the heart. Third, relax the part in which the vein is seated. Fourth, the patient may be directed to expire the air from his lungs.

The means to be pursued for saving life, after air has been admitted, have been stated in the history of these two cases, and I know of none more effectual than were adopted. The opening of the temporal artery gave great relief to Case I. It was not resorted to in Case II, because the patient had already lost as much blood as she could spare, during the operation.

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On motion by Dr. Howland, it was

*Resolved*, by the Medical and Chirurgical Faculty of Maryland, that the Vaccine Institution, conducted by Dr. Lucius O'Brien, be recommended to the confidence and patronage of the medical profession of this state.

The Directors of the Library made a report, of which the following is an extract.

"The Directors of the Library beg leave to report, that they have continued to invest the appropriation, heretofore placed at their disposal, in procuring works of standard merit. Besides such desirable works as could be obtained in this country, they have, during the past year, imported many excellent foreign publications, comprising altogether 274 volumes. Another order, embracing many works of great value, has been forwarded, and when these arrive, the Library will contain 343 volumes, all treating of subjects associated with the various departments of medical science, and many of them probably not to be met with elsewhere in this country."

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The Examiners for the Eastern Shore have not issued any licenses in the past year.

J. F. Recd Sec.

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In addition to the buildings erected in 1826, a new edifice has been put up within the last year, which will add considerably to the convenience of the class. The whole structure presents a uniform front of ninety-one feet, having three distinct lecture rooms, a cabinet hall for natural and artificial curiosities, and an ample library department, with abundant accommodations for the prosecution of practical anatomy.

Appropriations have been made, to enable the Faculty to enlarge the Library, which will be found to embrace the best works in the various branches of medical science, as well as the prominent periodicals of this country and Europe.

Mammoth models have been procured for the use of the Professor of Anatomy, carved by Mr. Rush of Philadelphia, on the plan of those so advantageously employed in the University of Pennsylvania; and in addition to the regular course of lectures, private instruction will be given, as heretofore, and extensive accommodations offered to all, who may desire to prosecute Practical Anatomy. In short, all the means of anatomical illustration, that can be had in any school of the United States, may be enjoyed in this establishment.













